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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**PARITY AVOIDANCE: A PROACTIVE ANALYSIS
OF THE OBSOLESCENCE OF THE THIRD OFFSET
STRATEGY**

by

Aaron Wellman

March 2019

Co-Advisors:

Stanley B. Supinski (contractor)
Rodrigo Nieto-Gomez

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**PARITY AVOIDANCE: A PROACTIVE ANALYSIS OF THE OBSOLESCENCE
OF THE THIRD OFFSET STRATEGY**

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Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
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ABSTRACT

Within the Department of Defense, offset strategies are policies of competition that mandate efforts to maintain technological superiority to generate or sustain a strategic advantage over near-peer competitor adversaries. The current strategy, the Third Offset, was implemented in 2014 and directs the development and leveraging of emergent, capabilities-based technologies to defend against the modernized, near-peer competitor nations of Russia and China. This thesis used unclassified resources to summarize the reactiveness of the previous offset strategies, define military supremacy, identify challenges to the Third Offset Strategy, and provide evidence that the current strategy is devalued. It also identified a list of conditions which, if met, render the strategy obsolete, ultimately determining that the Third Offset is, indeed, obsolete in its current form; it is unable to provide a strategic advantage to the United States. Finally, the thesis offers recommendations to the Department of Defense to reinforce the Third Offset Strategy with a goal of restoring its efficacy.

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LIST OF ACRONYMS AND ABBREVIATIONS

A2AD	Anti-Access Area Denial
DARPA	Defense Advanced Research Projects Agency
DoD	Department of Defense
MLP	China's National Medium- and Long-Term Plan for the Development of Science and Technology
NATO	North Atlantic Treaty Organization
PLA	Chinese People's Liberation Army

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EXECUTIVE SUMMARY

This thesis answers the question: How can the U.S. Department of Defense (DoD) determine if the Third Offset Strategy is obsolete? Within the DoD, offset strategies are policies of competition that mandate efforts to maintain technological superiority to generate or sustain a strategic advantage over near-peer competitor adversaries of the state. The DoD only implements a new offset strategy after competitive adversaries attain parity with U.S. capabilities, causing the DoD to lose its strategic advantage. While the United States is transitioning between offset strategies, the country is potentially vulnerable to adversary actions and the DoD holds no strategic advantage.

As their names suggest, the First Offset Strategy and the Second Offset Strategy preceded the current strategy, the Third Offset Strategy. The First Offset was implemented to counter the Soviet Union's sizeable advantages with nuclear weapons superiority in the early 1950s.¹ In response, the Soviet Union reinvigorated its own nuclear weapons program, ultimately surpassing U.S. nuclear capabilities.² To offset this, and to regain the strategic advantage, the DoD implemented the Second Offset in the 1970s, which developed superior technology in standoff weapons, precise targeting weaponry, and stealth capabilities to overcome and deter Communist nuclear superiority.³ While the United States was decisively engaged in its global war on terrorism, Russia and China invested heavily in modernizing their military capabilities to the point of parity with U.S. capabilities.⁴ In response, the DoD published the Third Offset Strategy in 2014. This Third

¹ U.S. Department of State, "Report to the National Security Council by the Executive Secretary," in *Foreign Relations of the United States, 1952–1954*, vol. II, part 1, ed. Lisle A. Rose and Neal H. Petersen (Washington, DC: United States Government Printing Office, 1984), <https://history.state.gov/historicaldocuments/frus1952-54v02p1/d101>.

² William J. Perry, "Technology and National Security: Risks and Responsibilities," paper presented at Conference on Risk and Responsibility in Contemporary Engineering and Science, French and U.S. Perspectives, Stanford Center for Interdisciplinary Studies, 2003, <https://stanford.edu/dept/france-stanford/Conferences/Risk/Perry.pdf>.

³ Joseph Felter, "It's Not Just the Technology: Beyond Offset Strategies," *Strategika*, no. 39 (March 2017), <https://www.hoover.org/research/its-not-just-technology-beyond-offset-strategies>.

⁴ Robert Work, "The Third U.S. Offset Strategy and Its Implications for Partners and Allies" (speech, January 28, 2015), <https://www.defense.gov/News/Speeches/Speech-View/Article/606641/the-third-us-offset-strategy-and-its-implications-for-partners-and-allies/>.

Offset directed the development and leveraging of emergent, capabilities-based technologies to defend against the modernized, near-peer competitor nations of Russia and China.⁵

The objective of this thesis is to proactively assess the conditions that, if met, will degrade the deterrent value of Third Offset. In the high-stakes game of national security and homeland defense, there is scarce time for an operational pause to reevaluate and reorient strategies. It is critical to proactively plan for when the Third Offset will lose relevancy and no longer afford the United States a decisive advantage over its competitors. Due to their reactive design, stakeholders have historically realized offset strategies are obsolete only after the United States has lost its strategic advantage, which places the country at an unnecessary risk from near-peer competitors. By understanding what could render the Third Offset obsolete, what already has degraded it, and how to control the flow of disruptive innovations into the homeland defense realm, the DoD is better postured to maintain the strategic advantage by either weighting the Third Offset to prolong the strategy or by determining when to replace it in advance of near-peer parity and before sacrificing its international strategic advantage.

This thesis holds that, in its current form, the Third Offset Strategy is obsolete and incapable of providing a meaningful strategic advantage for the United States with reinforcement. The strategy's overreliance on technology-based solutions increases the country's vulnerability to espionage (particularly cyber espionage), enhances its susceptibility to intellectual property theft, and places false faith in technologies that have yet to be discovered. Beyond these technological concerns, the strategy is constrained by resource funding and authorization limitations. These include the persistent fiscal constraints of the current operating environment, the competing homeland defense priorities of the DoD, the unclear objectives guiding the Third Offset, and the role that national willingness to accept policies plays in the development and employment of the Third Offset. Countering parity with near-peer competitors is an ongoing, ever-adaptive

⁵ Chuck Hagel, "The Defense Innovation Initiative" (official memorandum, Department of Defense, 2017), <http://archive.defense.gov/pubs/OSD013411-14.pdf>.

process. State adversaries have not been stagnant; they have been continually adapting and fluctuating to attain their own strategic advantages. This thesis presents evidence of Chinese and Russian activities to counter the U.S. advantages afforded by the Third Offset, as well as the inadvertently adverse effect the strategy has had on national alliances.

The forecasted options for the DoD are to reinforce the Third Offset, to make it more enduring, or to replace it altogether before competitors achieve parity and challenge the United States' strategic advantage. To accomplish these objectives, this thesis recommends specific actions the DoD should execute. To counter threats of intellectual property theft and cyberespionage, the DoD should weaponize the creative destruction process.⁶ To counter the Third Offset's reliance on nonexistent technologies, the DoD should not neglect its conventional warfare technologies and should also focus its resources and efforts on the development of technologies toward established strategic objectives. To counter the cyber threat, the DoD should leverage the deep-learning capacity of Third Offset technologies toward attribution of cyber attacks while hardening the existing network and building robust deterrence through first-strike capabilities. To counter the persistent fiscal constraints, the DoD should exercise patience and recognize that technology failure is a critical process of innovation. To establish clear strategic objectives for the Third Offset, the strategy should be specified in the National Defense Strategy as a path to secure the national interests of the National Security Strategy. To ensure conformance with the nation's willingness to employ the strategy, the DoD should ensure the Third Offset remains within the standards and interpretations of *just war*.⁷ To narrow the technology gap with allies, the DoD should increase the sharing of technological advances with trusted allies to preserve (and improve) existing international relations, enhance the allied nations' roles in securing U.S. national interests as well as their own, and avoid building resentment of U.S. superiority from friend and foe alike.

⁶ Joseph A. Schumpeter, *Capitalism, Socialism & Democracy* (London: Routledge, 1943), 83, et.pixel-online.org/files/etranslation/original/Schumpeter,%20Capitalism,%20Socialism%20and%20Democracy.pdf.

⁷ *Encyclopedia of Global Religion*, s.v. "Just War," ed. Mark Juergensmeyer and Wade Roof (Thousand Oaks, CA: SAGE, 2012), <http://dx.doi.org/10.4135/9781412997898.n375>.

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I. INTRODUCTION

A. THESIS QUESTION

This thesis answers the question: How can the U.S. Department of Defense (DoD) determine if the Third Offset Strategy is obsolete?

B. PROBLEM STATEMENT

Within the DoD, offset strategies are policies of competition that mandate efforts to maintain technological superiority to generate or sustain a strategic advantage over near-peer competitor adversaries of the state. The DoD develops offset strategies to overcome the parity of such competitors and only implements a new offset strategy after competitive adversaries attain parity with U.S. capabilities, causing the DoD to lose its strategic advantage. While the United States is transitioning between offset strategies, the country is potentially vulnerable to adversary actions and the DoD holds no strategic advantage.

To date, there have been three offset strategies implemented by the DoD to obtain strategic advantages over near-peer competitors. The First Offset Strategy (active in the 1950s through the 1970s) sought to counter the Soviet Union's nuclear weapons superiority.¹ The Soviet Union responded by reinvigorating its own nuclear weapons program, ultimately achieving parity with U.S. capabilities.² Seeking a means to offset this parity, and holding no strategic advantage over its most dangerous threat-nation, the DoD began working toward the Second Offset Strategy.

The Second Offset Strategy (mid-1970s through 2014) deployed superior technology in standoff weapons, precise targeting weaponry, and stealth capabilities to

¹ U.S. Department of State, "Report to the National Security Counsel by the Executive Secretary," in *Foreign Relations of the United States, 1952–1954*, vol. II, part 1, ed. Lisle A. Rose and Neal H. Petersen (Washington, DC: United States Government Printing Office, 1984), <https://history.state.gov/historicaldocuments/frus1952-54v02p1/d101>.

² William J. Perry, "Technology and National Security: Risks and Responsibilities" (paper presented at Conference on Risk and Responsibility in Contemporary Engineering and Science, French and U.S. Perspectives, Stanford Center for Interdisciplinary Studies, 2003), <https://stanford.edu/dept/france-stanford/Conferences/Risk/Perry.pdf>.

overcome and deter Communist nuclear superiority.³ In the early twenty-first century, while the United States was decisively engaged in the global war on terrorism, near-peer competitors (i.e., Russia and China) modernized their military capabilities to be on par with U.S. capabilities.⁴ Again seeking to offset this parity and once again hold strategic advantage over its largest competitors, the DoD sought a new strategy.

The Third Offset Strategy (the current strategy, referred to in this thesis simply as the *Third Offset*) was introduced in 2014 and seeks to develop and leverage emergent, capabilities-based technologies to defend against the modernized, near-peer competitor nations of Russia and China.⁵ With the Third Offset approaching its fifth anniversary, this is an optimal time to think about the strategy's longevity. The Third Offset's heavy reliance on network-enabled, technology-based solutions may make the strategy susceptible to replication and proliferation, particularly if competing nations execute a campaign of intellectual property theft and hacking. Persistent fiscal constraints, competing homeland defense priorities, and national reticence to employ such a strategy to its fullest capability also threaten to prevent or degrade the strategic advantage afforded by the Third Offset. As former Secretary of Defense James Mattis has frequently stated, "The enemy gets a vote."⁶ Credible counteractions by a thinking, technologically advanced, and equally determined adversary can quickly deflate the value of the Third Offset.

In the high-stakes game of national security and homeland defense, there is scarce time for an operational pause to reevaluate and reorient strategy. It is critical to proactively plan for when the Third Offset will lose relevancy and no longer afford the United States a decisive advantage over its competitors. Due to their reactive design, stakeholders have historically realized offset strategies are obsolete only after the United States has lost its

³ Joseph Felter, "It's Not Just the Technology: Beyond Offset Strategies," *Strategika*, no. 39 (March 2017), <https://www.hoover.org/research/its-not-just-technology-beyond-offset-strategies>.

⁴ Robert Work, "The Third U.S. Offset Strategy and Its Implications for Partners and Allies" (speech, January 28, 2015), <https://www.defense.gov/News/Speeches/Speech-View/Article/606641/the-third-us-offset-strategy-and-its-implications-for-partners-and-allies/>.

⁵ Chuck Hagel, "The Defense Innovation Initiative" (official memorandum, Department of Defense, 2017), <http://archive.defense.gov/pubs/OSD013411-14.pdf>.

⁶ Jon B. Alterman, "The Enemy Gets a Vote," Center for Strategic and International Studies, May 16, 2018, <https://www.csis.org/analysis/enemy-gets-vote>.

strategic advantage, which places the country at an unnecessary risk from near-peer competitors. By understanding what could render the Third Offset obsolete, what already has degraded it, and how to control the flow of disruptive innovations into the homeland defense realm, the DoD is better postured to maintain its strategic advantage by either weighting the Third Offset to prolong the strategy or determining when to replace it in advance of near-peer parity and before sacrificing the strategic advantage.

C. RESEARCH DESIGN

The objective of this study is to determine the validity and relevancy of the DoD's current strategy, the Third Offset. The 2014 "Defense Innovation Initiative" memorandum (the Third Offset) called for a "Department-wide initiative to pursue innovative ways to sustain and advance our military superiority for the 21st Century."⁷ This strategy includes "long-range research and development planning programs to identify, develop and field breakthroughs in technologies and warfare systems which maintain and promote U.S. military power; Department-wide support for these initiatives; and leveraging the industrial base towards homeland defense priorities."⁸

While this research analyzes previous offset strategies, the purpose is not to provide case studies of the First and Second Offsets; the earlier strategies are described only to explain how the United States lost its strategic advantage. The focus of this research is identifying the conditions and factors that should trigger the replacement of the Third Offset before it becomes obsolete, thereby allowing the United States to *maintain* its strategic advantage (as opposed to the otherwise inevitable need to *regain* it). This research uses unclassified, unlimited-distribution literature. Primary sources are DoD and other governmental publications, journal articles, publicly released reports, theses, and associated online content (blog posts, websites, etc.).

In Chapter II, the thesis defines superiority and supremacy within the United States, as well as for U.S. allies and adversaries. Chapter III describes what offset strategies are

⁷ Hagel, "The Defense Innovation Initiative."

⁸ Hagel.

and why they are important to homeland defense. This includes a summary of the First and Second Offset Strategies, specifying not only what they did but also why they were replaced, to provide context for the central point of this thesis: that new offset strategies were implemented to allow the United States to regain the strategic advantage it lost. Chapter IV discusses how the United States secures its superiority and what the nation gains from it to build the framework for the objectives of the offset strategies. Next, in Chapter V, the research analyzes factors that will cause the Third Offset Strategy to fail. This analysis makes it possible to identify the conditions that would render the strategy obsolete and to determine if such conditions already exist.

Finally, in Chapter VI, the research offers actions the DoD could execute in response to such conditions. The forecasted options for the DoD are to reinforce the Third Offset, to make it more enduring, or to replace it altogether before competitors achieve parity and challenge the United States' strategic advantage. The final product of this research is recommendations the DoD can use to reinforce the Third Offset or identify when to replace it to sustain the strategic advantage over near-peer competitors.

II. LITERATURE REVIEW

This thesis focuses acutely on military superiority, as it relates to the Third Offset Strategy. It is acknowledged that the military is but one of the United States' instruments of national power and that national security writ large depends on the interoperability of diplomatic, information, military, and economic functions. The offset strategies enhance or ensure the superiority of the military as a component of this national power. A central purpose for this thesis is to highlight the reactive nature of the offset strategies in an effort to proactively sustain strategic advantage rather than to reactively recover the advantage. In evaluating near-peer competitors, this thesis focuses on Russia and China as the states nearest to parity with the United States. This does not imply that Iran, North Korea, and violent extremist organizations do not present credible threats to the homeland. Nor does it mean that military actions in Syria and Africa or against transnational criminal organizations are not credible homeland defense priorities. As states, however, Russia and China represent the most plausible threats to U.S. national security. The Third Offset Strategy, like its predecessors, is heavily reliant on advanced technologies; this thesis explores the effects and consequences of establishing and sustaining technological superiority, including related implications to adversaries and allies alike.

A. TRENDS OF REACTIVITY

In his 2014 reexamination of *Project Solarium*—the original name for what would retroactively be called the First Offset Strategy—Michael Gallagher describes the U.S. national security environment of the 1950s as one where the threats of Communism were spreading at an alarming and uncontrollable rate, and one where the United States was at the disadvantage.⁹ The Soviet Union posed a substantial risk to U.S. national security, and the United States found itself without a strategic advantage over its competition. The

⁹ Michael J. Gallagher, "Intelligence and National Security Strategy: Reexamining Project Solarium," *Intelligence and National Security* 30, no. 4 (July 4, 2015): 476–78, <https://doi.org/10.1080/02684527.2014.885203>.

United States responded with the First Offset Strategy as a means to balance potential conflict into its favor, but this was only after the state had been disadvantaged.

Former Secretary of Defense William Perry, who was instrumental in the development and implementation of the Second Offset Strategy while serving as the Undersecretary of Defense for Research and Engineering in the 1970s, echoed the reactive nature of U.S. response to Soviet nuclear parity. He said that prior to the implementation of the Second Offset Strategy, the Soviet Union held a threefold advantage in conventional weapons over the United States.¹⁰ The United States had lost the upper hand over its most threatening adversary and was forced to react (in the form of the Second Offset Strategy) to regain the strategic advantage.

In his 2015 speech titled “The Third Offset Strategy and its Implications for Partners and Allies,” then Deputy Secretary of Defense Robert Work described the passivity that led to the United States once again losing its strategic advantage. “While the United States and our closest allies fought two lengthy wars over the past 13 years,” Work said, “the rest of the world and our potential adversaries were seeing how we operated. They looked at our advantages. They studied them. They analyzed them. They looked for weaknesses. And then they set about devising ways to counter our technological overmatch.”¹¹ By 2014, the United States had again lost the strategic advantage and was forced to react with the Third Offset Strategy.

B. MILITARY SUPERIORITY

In 2003 Barry R. Posen, a professor of political science at MIT, stated that the United States seized command of the “common” international domains (air, sea, and space) after the fall of the Soviet Union. Posen says that the wide array of nuclear attack submarines and aircraft carriers provides the United States with unsurpassed maritime capabilities.¹² He also states that the diverse capabilities of traditional and next-generation

¹⁰ Perry, “Technology and National Security.”

¹¹ Work, “The Third U.S. Offset Strategy.”

¹² Barry R. Posen, “Command of the Commons: The Military Foundation of U.S. Hegemony,” *International Security* 28, no. 1 (July 2003): 11–12, <https://doi.org/10.1162/016228803322427965>.

U.S. military aircraft, coupled with vast stockpiles of precision-guided munitions and limited credible ground-based threats to U.S. aircraft, affords unparalleled superiority of the skies.¹³ Regarding space, Posen acknowledges that the United States has not committed fully to conducting combat operations in or from space, but that the country recognizes the strategic interests within this domain.¹⁴ Nevertheless, Posen states that research and development into anti-satellite technology as well as redundant surveillance capabilities makes the United States less vulnerable and satellite-dependent in the space domain.¹⁵

Michael O’Hanlon and David Petraeus, in the fall of 2016, provided an overall assessment of U.S. military supremacy. Their assessment aligns with Posen’s claim of the United States’ “command of the commons,” claiming that the U.S. forces “play in a totally different league from the militaries of other countries.”¹⁶ They cite the health of the DoD’s procurement budget, the rejuvenated focus on innovation, and the high quality of today’s armed forces personnel as key contributing factors to this supremacy. O’Hanlon and Petraeus also say that the U.S. high-tech innovation sectors, economic stability, growing population, and trade policies play a non-military role in ensuring the supremacy of the U.S. military.¹⁷ More importantly, they assess that the U.S. system of alliances and global partnerships plays the largest role in assuring the dominance of the U.S. military. Despite this military superiority, O’Hanlon and Petraeus do see several constraints to its deployment. Difficulties in targeting adversaries hidden deep within urban centers, or with enemies masking their identities and intentions behind innocuous disguises, could limit the United States from leveraging its full military power.¹⁸

¹³ Posen, 15–16.

¹⁴ Posen, 12–13.

¹⁵ Posen, 14.

¹⁶ Michael O’Hanlon and David Petraeus, “America’s Awesome Military: And How to Make it Even Better,” *Foreign Affairs* 95, no. 5 (September/October 2016): 10, <https://www.foreignaffairs.com/articles/americas/2016-07-22/america-s-awesome-military>.

¹⁷ O’Hanlon and Petraeus, 11.

¹⁸ O’Hanlon and Petraeus, 12

As U.S. Army Strategist Matt Cavanaugh points out, overmatch in warfare technology alone does not automatically guarantee decisive success on the battlefield. To support this claim, he offers the example of the recent U.S. engagements in Iraq and Afghanistan, where the U.S. forces held considerable technological advantages over adversaries yet remained engaged in prolonged and bloody conflicts.¹⁹ Cavanaugh's argument is that capabilities overmatch did not produce swift and decisive victory during operations in the Middle East, so we should not expect it to do so against stronger, near-peer competitors.²⁰

Charles T. Cleveland et al., in a RAND report, claim that the U.S. military's dominance in the realm of conventional warfare capabilities has subsequently left it impotent against unconventional, technology-based attacks.²¹ They offer that the U.S. military's acumen in destroying the enemy and occupying its terrain is entirely ineffective against adversaries using nonconventional means (such as hacking) to establish influence or gain legitimacy. Cleveland et al. claim that U.S. adversaries successfully attack the United States through nonconventional means because the adversaries study the United States' successes in conventional warfare and adapt to avoid the country's strengths and exploit its weaknesses. This misplaced reliance on conventional warfare capabilities, and the U.S. military's failure to recognize and adapt to the nonconventional forms of warfare used by adversaries, they say, significantly degrades the military's readiness and ability to respond effectively to any threats (conventional or otherwise).²²

A large part of the United States' ability to project its military power globally is its alliances. A frequent contributor on this topic, especially regarding the European allies, is Daniel Fiott of the Institute for European Studies. Fiott acknowledges the significant challenges to the U.S. power projection but states that Third Offset technologies may

¹⁹ Matt L. Cavanaugh, "False Faith: The Third Offset Isn't a Strategy and Won't Win Our Next War," Modern War Institute, United States Military Academy, February 10, 2017, <https://mwi.usma.edu/false-faith-third-offset-isnt-strategy-wont-win-next-war/>.

²⁰ Cavanaugh.

²¹ Charles T. Cleveland et al., *An American Way of Political Warfare: A Proposal*, PE-304 (Santa Monica, CA: RAND, 2018), <https://www.rand.org/pubs/perspectives/PE304.html>.

²² Cleveland et al.

actually impede the United States' ability to project power globally. Exploitation of Third Offset innovations, Fiott says, may further widen the already resident technology gap between the United States and our North Atlantic Treaty Organization (NATO) allies.²³ He also offers that our allies, a significant source of U.S. power projection, might view a rebalancing of the strategy toward the Asia–Pacific as detracting the DoD's focus from the European theater.²⁴ Fiott further explains that, when faced with the growing technology gaps and the lowered prioritization of Eastern Europe for U.S. defense efforts, NATO is less likely to invest in Third Offset technologies or even in the strategy writ large.²⁵ A sympathetic issue Fiott (and Renaud Bellais) later explain is that the U.S. investment in Third Offset technology may not necessarily be open to European markets.²⁶ They argue that, without comparable European Union investments to Third Offset–like disruptive innovations, their economic markets could destabilize.²⁷ Such an event would have lasting adverse effects on the U.S. power projection capabilities through our allies.

The U.S. military owes much of its superiority to what Carl von Clausewitz calls *military genius*. In *Masters of War*, Michael I. Handel explains that Clausewitz believed numerically inferior militaries could prevail in war if they effectively synchronized their intelligence, deception, offense, defense, weaponry, and terrain exploitation efforts toward a unified effort.²⁸ In terms of the Third Offset Strategy, this means that U.S. military supremacy cannot be solely attributed to the military's sheer size and strength. It is the application of military genius, in part through the offset strategies, that enables the United States to maintain its military superiority.

²³ Daniel Fiott, "Europe and the Pentagon's Third Offset Strategy," *RUSI* 161, no. 1 (March 2016): 29, <https://doi.org/10.1080/03071847.2016.1152118>.

²⁴ Fiott, 29–30.

²⁵ Daniel Fiott, "A Revolution Too Far? U.S. Defence Innovation, Europe and NATO's Military-Technological Gap," *Journal of Strategic Studies* 40, no. 3 (May, 2016): 423–429, <https://doi.org/10.1080/0140239.2016.1176565>.

²⁶ Renaud Bellais and Daniel Fiott, "The European Defense Market: Disruptive Innovation and Market Destabilization," *Economics of Peace and Security* 12, no. 1 (April 2017): 40–41, <https://www-epsjournal-org-uk.libproxy.nps.edu/index.php/EPSJ>.

²⁷ Bellais and Fiott, 42–43.

²⁸ Michael I. Handel, *Masters of War: Classical Strategic Thought* (London: Routledge, 2005), 118–125, <https://doi.org/10.4324/9780203017746>.

Theories on deterrence play no small part in the supremacy of the U.S. military. Hans Morgenthau understood that the propensity for warfare between competing nations declines if there is a balance of power between them.²⁹ Stability increases when there is an equilibrium between competing states' capabilities and capacities. The theory of *mutual assured destruction* supports Morgenthau's beliefs. Robert Jervis describes mutual assured destruction as a situation wherein competing entities are deterred from deploying their most destructive and devastating capabilities against each other because both sides understand that the reciprocal response will be equally dreadful.³⁰ In short, neither side attacks the other first because they anticipate an equal-in-kind response.

Robert Jervis refutes the theory of mutual assured destruction with what he describes as the security dilemma.³¹ He says that all states want to feel secure and will execute measures independently to assure their own security. This creates a vicious cycle of insecurity: as one state takes steps to make itself more secure, other states feel increasingly insecure and threatened; states respond to the perceived threats from each other, tensions increase and overall security and stability decrease.

C. NEAR-PEER PARITY

Thomas Szayna et al. believe that intent is what distinguishes the difference between a U.S. peer and a peer competitor state of the United States.³² Their RAND report states that peer states of the United States merely hold comparable capabilities, but the peer competitors have both the comparable capabilities and the stated (or demonstrated) intentions to use those capabilities in competition with (or in opposition to) the United States. Szayna et al. identify four criteria for classification as a near-peer competitor with the United States: power, motivation, global scale, and outcome in doubt. According their

²⁹ As quoted in Michael Sheehan, *Balance of Power: History & Theory* (London: Routledge, 1995), 8–9, <https://doi.org/10.4324/9780203344613>.

³⁰ Robert Jervis, "Mutual Assured Destruction," *Foreign Policy*, no. 133 (Nov/Dec 2002): 40, https://www-jstor-org.libproxy.nps.edu/stable/3183553?seq=1#metadata_info_tab_contents.

³¹ Robert Jervis, "Cooperation under the Security Dilemma," *World Politics* 30, no. 2 (January 1978): 167–214, <https://doi.org/10.2307/2009958>.

³² Thomas S. Szayna et al., *The Emergence of Peer Competitors: A Framework for Analysis*, MR-1346-A (Santa Monica, CA: RAND, 2001), https://www.rand.org/pubs/monograph_reports/MR1346.html.

analysis, power does not simply come from the existence of a dominant military presence. Economic, diplomatic technological adeptness; education; industrialization; and a strong legal system also contribute to national power. Szayna et al. claim that true peer competitors are motivated by the intention to enhance their own national power while simultaneously devaluing the influence of other states' power in the region. Global scale, they say, is not a peer competitor's ability to act anywhere worldwide. Instead, Szayna et al. say that global scale is the peer competitor's ability to act globally in the regions critical to the United States. The final near-peer competitor criterion Szayna et al. identify is the ability to credibly challenge the United States' relative combat power in such a way that, if engaged in a conflict, a decisively victorious outcome for the United States would be in doubt.³³

In his 1987 book, Paul Kennedy claims that great powers can only be measured relative to the ascendance and decline of competing powers.³⁴ The relative strengths and weaknesses of national superpowers are never constant because states grow (or decline) and experience technological or industrial breakthroughs at uneven rates.³⁵ In short, this means that rotations in state statuses between superior, near-peer, and in decline are temporary and occur at uneven rates. Kennedy theorizes that the great powers in history have not ascended solely because of the strength and prowess of their militaries but because of the interrelated correlations of the states' military power, their use of economic production during wartime, and their long-term economic stability relative to their competitors.³⁶ In terms of near-peer parity, this means that efforts to counter and overcome the parity of competing nations require more than just military supremacy.

A central point to any discussion of near-peer states' parity with the United States is an evaluation of the national interests of those states. Understanding the competing states' strategic objectives provides insight into the principles guiding their responses to

³³ Szayna et al.

³⁴ Paul Kennedy, *The Rise and Fall of Great Powers: Economic Change and Military Conflict from 1500 to 2000*, Kindle edition (New York: Random House, 1987), loc. 156.

³⁵ Kennedy, loc. 169.

³⁶ Kennedy, loc. 156–157.

U.S. supremacy. According to the Information Office of the People's Republic of China, the Chinese "core national interests" support the protection and advancement of China. Chinese officials say these are:

- The preservation of Chinese sovereignty
- Security of the state of China
- The integrity and reunification of Chinese territories
- The safeguarding of China's political and social systems
- An enduring economy³⁷

The Task Force on Russia and U.S. National Interests assesses that the Russian "principal national interests" align toward achieving weapons superiority and state security, and maintaining (or regaining) influence over former Soviet regions. These "interests" are:

- Stopping the use of nuclear or mass-destruction weapons against former Soviet territories (including Russia itself)
- Achieving deterrence through nuclear superiority
- Preventing terrorism in Russia
- Maintaining influence over former Soviet states while degrading outside influences in those regions
- Growing the economy with the exportation of energy
- Preserving the Russian political system(s)

³⁷ Information Office of the State Council, *China's Peaceful Development* (Beijing: People's Republic of China, 2011), http://www.gov.cn/english/official/2011-09/06/content_1941354.htm.

- Advancing the Russian elites' major economic and political-business alliances³⁸

On the subject of international responses to, and parity with, the United States, Vasily Kashin is a frequent commenter from the Russian perspective. In 2017, he and Michael Raska published a policy report titled “Countering the U.S. Third Offset Strategy: Russian Perspectives, Responses and Challenges.” In this report, they state that the Russians are also exploring advanced unmanned platforms as well as sourcing innovation institutions to help discover next-generation technologies.³⁹ The Russian Advanced Research Foundation (ARF) holds a similar mission purpose as the U.S. Defense Advanced Research Projects Agency (DARPA): to research and develop high-risk, high-payoff technologies including artificial intelligence, unmanned vehicles, and cognitive technologies, among other next-generation capabilities.⁴⁰ Kashin and Raska postulate that the Russians are in the advanced stages of some technological areas, such as direct-energy weapons, rail guns, hypersonic vehicles, and unmanned underwater vehicles.

In his 2017 research brief, Fan Gaoyue, a retired Chinese senior military officer, said that China is unlikely to react energetically to the United States because 1) China likely sees the Third Offset Strategy as an attempt to instigate a technological arms race with China (and Russia) in which the United States has a distinct advantage; 2) China sees the strategy as a ruse by the United States to mask its own waning power; or 3) China recognizes that the Third Offset Strategy seeks to strengthen U.S. national security through technological superiority.⁴¹ Fan says that China is unlikely to deviate from its goal to

³⁸ Task Force on Russia and U.S. National Interests, *Russia and U.S. National Interests* (Cambridge, MA: Belfer Center for Science and International Affairs, 2011), https://www.belfercenter.org/sites/default/files/legacy/files/Russia-and-US-NI_final-web.pdf.

³⁹ Vasily Kashin and Michael Raska, “Countering the U.S. Third Offset Strategy: Russian Perspectives, Responses and Challenges,” PR170124 (policy report, S. Rajaratnam School of International Studies, Nanyang Technological University, 2017), <https://www.rsis.edu.sg/rsis-publication/idss/countering-the-u-s-third-offset-strategy-russian-perspectives-responses-and-challenges/#.XGLpUbAUnIU>.

⁴⁰ Kashin and Raska.

⁴¹ Fan Gaoyue, *A Chinese Perspective on the U.S. Third Offset Strategy and Possible Chinese Responses* (San Diego: University of California Institute on Global Conflict and Cooperation, 2017), <http://www.escholarship.org/uc/item/5wh2v87n>.

rejuvenate its national power status, but will probably continue to invest in Third Offset–like technologies to reduce the gap between U.S. and Chinese military capabilities.⁴²

D. TECHNOLOGICAL INNOVATIONS

Clayton Christensen introduces the idea of *disruptive technologies*.⁴³ Christensen differentiates these from *sustaining technologies*, which merely improve upon existing innovations and products. Contrarily, he defines disruptive technologies as entirely new innovations which fulfill needs never before addressed. Generally, in business, disruptive technologies create new markets and new customers and usually perform poorly until broader they are adopted more broadly.⁴⁴ The discussion of disruptive technologies is relevant to this thesis because, as William Thomas of the American Institute of Physics pointed out in his analysis of a June 2017 Government Accountability Office report, the DoD seeks to make Third Offset Strategy technologies disruptive.⁴⁵ Disruptive technologies are also highly relevant to the discussions of the Third Offset because most innovations of this nature do not begin life with a stated intention for homeland defense applications. Early adoption of disruptive technologies may prove to differentiate between gaining a strategic advantage and seeking to counter an adversary’s advanced technology.

While his theory of *creative destruction* was originally designed for economic and industrial applications, Joseph Schumpeter’s concept remains equally relevant to the innovation specified in the Third Offset. The theory says that markets fail because, internally, they are in a perpetual state of change; they constantly destroy old industries

⁴² Fan.

⁴³ Clayton M. Christensen, *The Innovator’s Dilemma: When New Technologies Cause Great Firms to Fail*, Kindle edition (Cambridge, MA: Harvard Business Review Press, 2016), loc. 257.

⁴⁴ Christensen, loc. 257.

⁴⁵ William Thomas, “GAO Urges DoD to Differentiate Management of ‘Disruptive’ and ‘Incremental’ R&D,” American Institute of Physics, July 13, 2017, <https://www.aip.org/fyi/2017/gao-urges-dod-differentiate-management-disruptive-and-incremental-rd>; Michael J. Sullivan et al., *Defense Science and Technology: Adopting Best Practices Can Improve Innovation Investments and Management* (Washington, DC: Government Accountability Office, 2017), <https://www.gao.gov/products/GAO-17-499>.

and innovate new industries in order to suit the new demands of consumers.⁴⁶ This eternal destruction and building in the industry provides reduced market stability and results in limited innovation because the needs being filled constantly change.⁴⁷ Applying Schumpeter's creative destruction theory to innovative research and development (as in the Third Offset Strategy), Jeho Lee et al. call this a losing strategy.⁴⁸ They say the technology competitions between states, or even among industries within a single state, results in fewer overall survivors of the competition over time.⁴⁹ The costs of long-term innovation competition outweigh the short-term innovative technology gains, Lee et al. say.⁵⁰

Evidence of Christensen's and Schumpeter's theories already exists in U.S. relations with China, according to Norton Schwartz. He says the two nations are locked in a contest for global economic, military, and political superiority driven by the mastery of technology.⁵¹ Schwartz argues that talent, not capital, is the most valuable asset in this competition. He says that the victor of this competition is the state that can attract and retain the best and brightest minds in the field, not the state that can invest the most in technological innovations. Schwartz says that this talent pool will naturally gravitate toward the freest societal bases. In this sense, he argues that U.S. trade practices, immigration laws, and national security policies may be the path for U.S. technological superiority.⁵²

In 2017, Richard Bitzinger penned a research brief on the effects of the Third Offset Strategy between near-peer competitors and its suggestions for the global arms industry.

⁴⁶ Joseph A. Schumpeter, *Capitalism, Socialism & Democracy* (London: Routledge, 1943), 83, eet.pixel-online.org/files/etranslation/original/Schumpeter,%20Capitalism,%20Socialism%20and%20Democracy.pdf.

⁴⁷ Schumpeter, 83.

⁴⁸ Jeho Lee et al., "A Hidden Cost of Strategic Alliances under Schumpeterian Dynamics," *Research Policy* 39, no. 2 (March 2010): 229, <https://doi.org/10.1016/j.respol.2009.12.004>.

⁴⁹ Lee et al., 233–234.

⁵⁰ Lee et al., 236–237.

⁵¹ Norton A. Schwartz, "The U.S. Faces an Innovator's Dilemma in its Relationship with China," *Real Clear Defense*, February 5, 2018, https://www.realcleardefense.com/articles/2018/02/05/the_us_faces_an_innovators_dilemma_in_its_relationship_with_china_113013.html.

⁵² Schwartz.

The article centers mostly on the growing Chinese anti-access area denial (A2AD) capabilities, and how the United States is (or should be) responding.⁵³ In doing so, Bitzinger offers two areas of concern relative to disruptive innovations. He believes the disruptive innovations of Third Offset technologies are too expensive for many countries (U.S. allies included) to produce and employ in a full-scale capacity in their militaries. The other matter, which he identifies is perhaps of greatest concern to the United States, is that ally nations do not factor U.S. near-peer competition (in this case, China) into their defense decision-making processes. In short, Bitzinger says that the United States may be forced to pursue disruptive Third Offset technology without great assistance from allies or the international community.⁵⁴

⁵³ A2AD refers to China's defenses preventing the United States and regional allies from entering and operating in the East and South China seas. Richard Bitzinger, *US-China Competition, the Third Offset Strategy, and Implications for the Global Arms Industry* (San Diego: University of California Institute on Global Conflict and Cooperation, 2017), <https://escholarship.org/uc/item/9140j98k>.

⁵⁴ Bitzinger.

III. BACKGROUND OF THE OFFSET STRATEGIES: A TREND OF REACTIVENESS

Offset strategies are the mechanism by which the DoD counters its adversaries' advantages. The strategies focus on leveraging superior technologic advances toward homeland defense priorities. The following is a summary of the three DoD offset strategies employed to date.

While the focus of this thesis is the Third Offset Strategy, and the determination of the conditions that will render it obsolete, the analysis of the First and Second Offset provides insight to the reactive nature of the strategies as a whole. Each of the three strategies came into existence to regain a strategic advantage over competitors. The DoD retired the first and second strategies only after they proved obsolete. This speaks specifically to the crux of this thesis: that is, determining in advance of parity what will render the Third Offset Strategy obsolete.

A. FIRST OFFSET STRATEGY

During the Cold War era, the First Offset Strategy was the DoD's response to the Soviet Union's sizeable geographic advantage in Western Europe.⁵⁵ Central to the First Offset was the deterrent value of nuclear weapons superiority.⁵⁶ The (retroactively named) First Offset Strategy was formally codified on October 30, 1953, as the National Security Council's Basic National Security Policy.⁵⁷

In the pursuit and defense of such national interests as a strong and growing economy and the containment of Communism, the First Offset specified the requirement for "a strong military posture, with emphasis on the capability of inflicting massive retaliatory damage by offensive striking power."⁵⁸ The strategy further directed the DoD

⁵⁵ Gallagher, "Intelligence and National Security Strategy," 461–485.

⁵⁶ Gallagher, 467.

⁵⁷ U.S. Department of State, *Report to the National Security Counsel*.

⁵⁸ U.S. Department of State.

to “[c]onduct and foster scientific research and development so as to insure superiority in quantity and quality of weapons systems, with attendant continuing review of the level and composition of forces and of the industrial base required for adequate defense and for successful prosecution of general war.”⁵⁹ In no uncertain terms, the strategy called for the stockpiling of atomic weapons and the effective means of their delivery as a major contribution to the national security of the United States and its allies.⁶⁰

Between 1945 and 1965 the United States’ nuclear weapons arsenal rose from less than 10,000 to well over 30,000, by far outnumbering the Soviet capabilities at the time.⁶¹ An intrinsic, but supplemental, development spurring from this buildup of nuclear weapons was the fielding of advanced delivery platforms for the weapons themselves. As the nuclear weapons stockpile grew and developed, so too did the DoD’s array of strategic bombers to deliver these weapons. Since 1945, the United States has purchased over 5,000 additional aircraft whose primary mission is nuclear weapons delivery.⁶² While this statistic may seem mundane, it should be noted that such an increase in military equipment triggers a significant spike in additional manpower and resources to support the increased capabilities.

The First Offset Strategy proved to be an effective containment and deterrence strategy for the United States, but it also sparked the nuclear arms race with the Kremlin.⁶³ In response to the United States’ increased nuclear weapons capabilities and capacities, the Soviet Union revamped its own military modernization.⁶⁴ Ultimately, the Soviet industrial

⁵⁹ U.S. Department of State.

⁶⁰ U.S. Department of State.

⁶¹ David Holloway, “Nuclear Weapons and the Escalation of the Cold War, 1945–1962,” in *The Cambridge History of the Cold War*, ed. Melvyn P. Leffler and Odd Arne Westad (Cambridge: Cambridge University Press, 2010), 376–397, <https://doi.org/10.1017/CHOL9780521837194.019>.

⁶² Robert S. Norris, “The History of the U.S. Nuclear Stockpile 1945–2013,” *Science and Security* 66, no. 3 (August, 2013), <https://fas.org/pir-pubs/the-history-of-the-u-s-nuclear-stockpile-1945-2013/>.

⁶³ Shawn Brimley, “Offset Strategies & Warfighting Regimes,” *War on the Rocks*, October 15, 2014, <https://warontherocks.com/2014/10/offset-strategies-warfighting-regimes/>; Charles L. Glaser, “The Causes and Consequences of Arms Races,” *Annual Review of Political Science* 3, no. 1 (June 2000): 251–76, <http://www.annualreviews.org/doi/10.1146/annurev.polisci.3.1.251>.

⁶⁴ Glaser, “Causes and Consequences of Arms Races,” 254.

machine out-produced the United States in conventional and nuclear weapons capabilities.⁶⁵ Beginning in 1949, the Soviet Union manufactured some 55,000 nuclear warheads in response to the United States' nuclear activity.⁶⁶

With the Soviet Union's achievement of nuclear parity (and, in fact, supremacy), the First Offset became irrelevant. The strategy reached its maximum effective range and had no flexibility to provide the United States with a strategic advantage over its largest and most feared adversary. The deterrence value of nuclear superiority provided by the First Offset was irrelevant if the United States could not compete with the Soviets on the one-dimensional battlefield of nuclear weapons stockpiles. Without a strategic advantage, and now vulnerable to a potential attack from the Soviets, the DoD was forced to search for another mechanism to regain the upper hand.⁶⁷

B. SECOND OFFSET STRATEGY

The Second Offset Strategy shifted the United States focus toward more accurate weaponry.⁶⁸ Triggered by the Soviet Union's growing nuclear weapons capabilities, Defense Secretary Harold Brown and his staff sought increased resource investment in technologies such as stealth technology; long-range, precision-guided munitions; and intelligence-surveillance-reconnaissance systems.⁶⁹ The DoD also sought the capability to field fewer, but more capable, military forces with the effect of neutralizing the Soviet conventional military advantage—essentially, quality over quantity.⁷⁰ To accomplish this, the United States developed precision-guided munitions capable of active trajectory mid-

⁶⁵ Perry, "Technology and National Security."

⁶⁶ Zachary Keck, "Nuclear Weapon Stockpiles: Past and Present," *The Diplomat*, September 2, 2013, <https://thediplomat.com/2013/09/nuclear-weapon-stockpiles-past-and-present/>.

⁶⁷ Brimley, "Offset Strategies & Warfighting Regimes."

⁶⁸ David Jablonsky, "US Military Doctrine and the Revolution in Military Affairs," *Parameters* 41, no. 3 (October 1994): 18–36, <http://www.ssi.armywarcollege.edu/pubs/parameters/articles/1994/jablonsk.htm>.

⁶⁹ Felter, "It's Not Just the Technology."

⁷⁰ Perry, "Technology and National Security"; Timothy A. Walton, "Securing the Third Offset Strategy: Priorities for the Next Secretary of Defense," *Joint Force Quarterly* 3rd Quarter, no. 82 (July 2016): 6–15, <https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-82/Article/793224/securing-the-third-offset-strategy-priorities-for-the-next-secretary-of-defense/>.

flight, aircraft radar defeat mechanisms like stealth technology, and satellite networking that enabled global positioning system (GPS) technologies.⁷¹

Secretary Brown and Director for Defense Research and Engineering William Perry saw the potential for emergent technology to both improve existing weaponry and to better enable capabilities with less capacity. Further seeking to use new technologies for homeland defense priorities, Director Perry (ordered by Secretary Brown and under the precepts of the Second Offset) directed the development of Assault Breaker: a revolutionary concept of battle combining multi-modal, multi-domain, current and future capabilities to break the Soviet strongholds through precision targeting.⁷² Assault Breaker used technological advances as a force multiplier for the United States by linking conventional U.S. surface- and air-based missile systems with Second Offset precision targeting.⁷³ This capability enabled the systematic dismantling of layered Soviet defenses at stand-off distances.

Secretary Brown's final guidance toward the development and implementation of the Second Offset came in the rebirth of cruise missile technology.⁷⁴ Recognizing the strategic applications of this revitalized technology, particularly when coupled with the budding GPS technology, Secretary Brown capitalized on the opportunity and embraced cruise missile technology as another element of his (and Director Perry's) Second Offset Strategy.⁷⁵ The Second Offset remained relevant to the United States military as late as the 2003 invasion of Iraq, when Tomahawk guided missiles were used to neutralize targets of military importance in advance of follow-on forces' movement into the battle area.

While the United States was decisively engaged in the Global War on Terrorism, America's near-peer competitors invested heavily in the replication and proliferation of

⁷¹ Walton, "Securing the Third Offset Strategy," 6–15.

⁷² Edward C. Keefer, *Harold Brown: Offsetting the Soviet Military Challenge 1977–1981* (Washington, DC: Historical Office, Office of the Secretary of Defense, 2017), 586, http://history.defense.gov/Portals/70/Documents/secretaryofdefense/OSDSeries_Vol9.pdf?ver=2017-06-13-152737-467.

⁷³ Keefer, 586–590.

⁷⁴ Keefer, 590.

⁷⁵ Keefer, 590.

Second Offset technology.⁷⁶ Through reverse engineering, broad international arms dealing, and covert espionage practices, the Chinese developed the functions J-20 fifth-generation aircraft.⁷⁷ Russian prototypes of stealth aircraft technologies first flew in 2010, and the resulting Perspective Front-Line Aviation Complex (PAK FA) aircraft could potentially challenge the air superiority provided by Second Offset technology.⁷⁸ The revolution of precision-guided munitions was quickly proliferated throughout the militaries of not just the United States, Russia, and China but also every modernized nation.⁷⁹

Nearing the conclusion of major combat operations in Iraq and Afghanistan, the DoD came to realize the threats posed by the new era of great power competition with the resurgent Russian, and rising Chinese, national militaries.⁸⁰ Once widespread parity among Second Offset technologies was achieved, the DoD only then recognized the necessity of developing a subsequent strategy to offset the balance of national powers.

C. THIRD OFFSET STRATEGY

The Third Offset Strategy was formally announced in November 2014 as “The Defense Innovation Initiative” memorandum from then Defense Secretary Chuck Hagel.⁸¹ The memorandum called for a “[d]epartment-wide initiative to pursue innovative ways to

⁷⁶ Robert Work, “Remarks by Deputy Secretary Work on Third Offset Strategy” (speech, April 28, 2016), <https://www.defense.gov/News/Speeches/Speech-View/Article/753482/remarks-by-d%20eputy-secretary-work-on-third-offset-strategy/>.

⁷⁷ Phillip C. Saunders and Joshua K. Wiseman, *Buy, Build, or Steal: China’s Quest for Advanced Military Aviation Technologies* (Washington, DC: National Defense University Press, 2011), <http://www.dtic.mil/dtic/tr/fulltext/u2/a577394.pdf>.

⁷⁸ Konstantinos Zikidis and Charisios Tokas, “Low Observable Principles, Stealth Aircraft and Anti-stealth Technologies,” paper presented at 2nd International Conference on Applications of Mathematics and Information in Military Science (AMIMS), Athens, Greece, 11–12 April, 2013, www.researchgate.net/profile/Konstantinos_Zikidis/publication/259503614_Low_Observable_Principles_Stealth_Aircraft_and_Anti-Stealth_Technologies/links/00b4952c58a741e39f000000.pdf; Ralph J. Waite IV, “The Fragility of Air Dominance” (master’s thesis, U.S. Army War College, 2012), <http://www.dtic.mil/dtic/tr/fulltext/u2/a561936.pdf>.

⁷⁹ John J. Mearsheimer, “Precision-Guided Munitions and Conventional Deterrence,” *Survival* 21, no. 2 (March 1979): 68–76, <https://doi.org/10.1080/00396337908441802>.

⁸⁰ Work, “Remarks on Third Offset Strategy.”

⁸¹ Hagel, “The Defense Innovation Initiative.”

sustain and advance our military superiority for the 21st Century.”⁸² In the memorandum, Secretary Hagel outlines that the Third Offset shall include revised talent management to synthesize leadership development with emerging opportunities, long-range research and development of technologies to sustain and advance U.S. military power, a refocusing of war-gaming/red team activities to better assess flexibility to the current and future environments, the development of innovative approaches using capabilities to counter emerging threats, a department-wide approach leveraging the full spectrum of defense capabilities, and departmental self-assessment to improve efficiency and effectiveness.⁸³ Put more succinctly by Deputy Secretary of Defense Bob Work, the Third Offset Strategy seeks to use technology to augment (not replace) the human component of U.S. military warfare.⁸⁴

The Third Offset focuses on autonomous learning systems, human-machine collaborative decision-making, assisted human operations, advanced manned-unmanned systems operations, and network-enabled autonomous weapons and high-speed projectiles.⁸⁵ This strategy also includes the potential for artificial intelligence and self-automation.⁸⁶

While the United States is still in the relatively nascent stages of the Third Offset Strategy, and much of the developing technology and capabilities reside within the classified enclave, there are a few available examples of advanced warfare technology stemming from this directive. Understanding that civilian technology is rapidly (and

⁸² Hagel.

⁸³ Hagel.

⁸⁴ Work, “Remarks on Third Offset Strategy.”

⁸⁵ Jesse Ellman, Lisa Samp, and Gabriel Coll, *Assessing the Third Offset Strategy* (Washington, DC: Center for Strategic and International Studies, 2016), https://csis-prod.s3.amazonaws.com/s3fs-public/publication/170302_Ellman_ThirdOffsetStrategySummary_Web.pdf?EX01GwjFU22_Bkd5A.nx.fJXTKRDKbVR.

⁸⁶ Ian Livingston, “Technology and the ‘Third Offset’ Foster Innovation for the Force of the Future,” Brookings Institution, December 9, 2016, <https://www.brookings.edu/blog/order-from-chaos/2016/12/09/technology-and-the-third-offset-foster-innovation-for-the-force-of-the-future/>.

perpetually) evolving, DARPA has sought to exploit the commercial industry.⁸⁷ One example is DARPA's work with the defense industrial base to enhance close air support operations with tablet and smartphone technologies.⁸⁸ Prior to this innovation, the process for troops in contact to request critical close air support on the battlefield was less than optimal; it required constant radio communication with both the aviation assets and higher headquarters, redundant verification of locations (i.e., GPS, confirmed by the use of a map and compass), marking of projected targets, and mapping of projected ingress and egress routes for the aircraft, all while (potentially) seeking cover from incoming enemy fire. Stemming from DARPA's work, troops on the battlefield now have access to close air support to engage targets by using encrypted, military network-enabled devices.⁸⁹ Beyond close air support, future applications of this technology may even further enable the warfighter on the ground; similar applications may include controlling indirect fires, or more expediently processing aerial casualty evacuation request.

⁸⁷ Cheryl Pellerin, "Deputy Secretary: Third Offset Strategy Bolsters America's Military Deterrence," Department of Defense, October 31, 2016, <https://www.defense.gov/News/Article/Article/991434/deputy-secretary-third-offset-strategy-bolsters-americas-military-deterrence/>.

⁸⁸ Pellerin.

⁸⁹ Pellerin.

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IV. WHAT MAKES THE UNITED STATES SUPERIOR?

The purpose of an offset strategy is for the United States to gain (or regain) a strategic advantage over competitors. A strategic advantage affords supremacy and reduces parity. But how can the United States assure its supremacy? How does the United States know that its strategic advantage remains valid? What is it that actually makes the United States a supreme power in the international community? This chapter explores these questions by offering a series of postulations and analyses regarding what actually makes the United States superior.

A. IS IT OUR ACUMEN IN WINNING WARS?

As mentioned in Chapter II, militaries can win wars despite numeric inferiority—or, for the purposes of this thesis, technological inferiority—through what Clausewitz describes as *military genius*: the effective synchronization of intelligence, deception, offense, defense, weaponry, and exploitation of terrain.⁹⁰ Numerically, or technologically, inferior militaries can win wars against vastly superior adversaries if they can effectively harness the power of military genius. This was evident in the Continental Army’s victory over the British Empire during the Revolutionary War, the North Vietnamese successes against U.S. forces in the Vietnam War, and the prolonged engagements of coalition forces in Operations Iraqi and Enduring Freedom (conflicts in which the United States held unparalleled superiority yet still was mired in major combat operations).⁹¹

The military represents only one of the United States’ four instruments of national power: diplomacy, information (which the military influences, but does not control), military, and economics. This thesis only addresses the military aspects of national power; however, it is important to remain cognizant that all the instruments of power are mutually dependent—none operate in a vacuum devoid of influences from each other. Military prowess cannot secure U.S. supremacy without effective diplomacy to negotiate treaties,

⁹⁰ As quoted in Handel, *Masters of War*, 118–125.

⁹¹ Cavanaugh, “False Faith.”

alliances, and policies for the escalation and de-escalation of hostilities. Information plays a pivotal role in shaping public perceptions, which in turn influence public support for military action. Economic sanctions contribute to the degradation of adversarial strength while relief aid purchases stability and reduces the requirements for military engagement. The superiority of the United States lies in its flexible ability to leverage the whole of its national power, shifting between diplomatic-, informational-, military-, or economic-led activities as the environment warrants.

B. IS IT MERELY THE ABSENCE OF NEAR-PEER COMPETITORS?

The key defining difference between near-peer states and near-peer *competitor* states is intent. Allied nations may hold capabilities comparable to the United States', but they have no *intention* to use those capabilities to compete with the United States. Conversely, hostile nations may harbor the intention to challenge the United States but do not own the requisite capabilities to effectively compete.⁹² This thesis uses Thomas Szayna's four criteria to quantify the *capabilities* a state requires to compete with the United States as a near-peer state: "*power and motivation to confront the United States on a global scale in such a manner and magnitude that the outcome would be in doubt.*"⁹³

- *Power*—A near-peer competitor's power comes from more than just a dominant military strength. National power comes from an effective synthesis of the whole of government, including nodes of the economic, political, industrial, informational, educational, and legal systems.⁹⁴
- *Motivation*—Aligning with the intent to compete with the United States, the motivation of a near-peer competitor is the desire to act in order to unseat the status quo and gain more power and influence while

⁹² Szayna et al., *Emergence of Peer Competitors*.

⁹³ Szayna et al.

⁹⁴ Szayna et al.

simultaneously decreasing the power and influence of the reigning dominant state(s).⁹⁵

- *Global Scale*—To suffice as a near-peer competitor with the United States, adversaries do not necessarily need the ability to challenge the United States in every region globally. Instead, near-peer competitors only require the capacity to challenge on a global scale in those regions deemed critical to the United States.⁹⁶
- *Outcome of Conflict in Doubt*—The true strength of a near-peer competitor is its potential to deny victory to the United States if conflict occurs. This is based on the state's amassed power and skill relative to the United States'.⁹⁷

Statuses of supremacy, inferiority, and near-peer competitor can only be measured relative to the ascendance and decline of competing powers.⁹⁸ The relative strengths and weaknesses of national superpowers are never constant and always fluctuate because states grow (or decline) and experience technological or industrial breakthroughs at uneven rates.⁹⁹ State statuses between superior, near-peer, and in decline are temporary and not uniform. Great powers throughout history rise not solely from the strength and prowess of their militaries but from the interrelated correlations of their military power, their use of economic production during wartime, and their long-term economic stability *relative* to their competitors.¹⁰⁰ In terms of near-peer parity, this means that efforts to counter and overcome the parity of competing nations require more than just military supremacy.

⁹⁵ Szayna et al.

⁹⁶ Szayna et al.

⁹⁷ Szayna et al.

⁹⁸ Kennedy, *The Rise and Fall of Great Powers*, loc. 156.

⁹⁹ Kennedy, loc. 169.

¹⁰⁰ Kennedy, loc. 156–157.

C. IS IT THE UNITED STATES' ABILITY TO PROJECT POWER GLOBALLY?

A distinct advantage held by the United States military is its persistent global presence. The U.S. has military installations on every (inhabited) continent. This provides the United States with an enduring forward-deployed presence in every region. With this presence, the United States holds a regional response force capable of rapidly responding to crisis or conflict. This enduring forward-deployed presence contributes to the local economies, which helps to establish or maintain regional stability. By strategically stationing military installations globally, the United States enhances its international relationships and partnerships. The national security of the hosting nation inherently increases with the presence of a U.S. military footprint within its borders, which provides a significant deterrent value while also providing a resident platform of U.S. diplomatic actions.

In conjunction with the enduring forward-deployed installations, the U.S. military power projection provides a strategic advantage in its ability to rapidly deploy forces to every region. Robust naval and aeronautical capabilities afford the U.S. military global force deployment capabilities. Moreover, these platforms give the U.S. military the ability to influence and affect areas without actual insertion of forces. The U.S. military's rotational deployment programs throughout the continents and oceans reinforce the ever-present U.S. influence and a readily available response capability. Strategic prepositioning of logistics means that the U.S. military possesses the ability to conduct sustained, global operations whenever and wherever needed.

D. IS IT THE STRENGTH OF OUR ALLIANCES AND TREATIES?

For all of the might resident in the U.S. military, the interconnectivity of alliances with other nations multiplies the United States' national power. Perhaps no other alliance is more notable, or critical, as NATO. This treaty, originally emplaced to counter and constrain the Soviet Union, continues its mission as a primary response mechanism to Russian threats to Europe. The greater benefit to the United States is the so-called "Collective Defence" clause (Article 5) of the treaty:

The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defence recognised by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.¹⁰¹

Beyond the Russian threat, and even the threat in Europe writ large, the significance of Article 5 to U.S. supremacy cannot be understated. Even if the United States does not (or did not) have the most powerful military in the world, it is reinforced by the militaries (and other instruments of national power) of the NATO nations. While the U.S. military sustains its supremacy, it does so with the assurance of counter-attack support from NATO.

E. IS IT THE (IM)BALANCE OF POWER?

According to the famed theorist Hans Morgenthau, the stability afforded by the equilibrium of national powers between competing states reduces the propensity for warfare.¹⁰² The balancing of powers prevents one state's dominance over others, thereby eliminating one of the major causes of conflict. Traditional theories on deterrence, such as mutual assured destruction, seem to support this claim; neither the Soviet Union nor the United States used nuclear weapons on each other during the Cold War because they understood that doing so would result in a response in kind.¹⁰³ The problem with this concept, however, is that it produces stagnation and embraces parity. U.S. policymakers recognize that innovation (and the subsequent adaptation for defense purposes) is an unending global cycle. States, regardless of any power balances, continue to compete to gain superiority. This is the *security dilemma* described by Robert Jervis.¹⁰⁴ States have a vested interest in their own security, but every step they take to assure their own security

¹⁰¹ North Atlantic Treaty Organization, *The North Atlantic Treaty* (Washington, DC: NATO, 1949), https://www.nato.int/nato_static_fl2014/assets/pdf/stock_publications/20120822_nato_treaty_en_light_2009.pdf.

¹⁰² As referenced by Sheehan, *Balance of Power*, 78.

¹⁰³ Jervis, "Mutual Assured Destruction," 40.

¹⁰⁴ Jervis, "Cooperation under the Security Dilemma," 167–214.

causes competitors to feel increasingly insecure and threatened. The United States has stood alone as the beneficiary of an imbalance of power since the end of the Cold War and the fall of the Soviet Union. To broaden its influence, the United States has built strong alliances and partnerships internationally to selectively balance nation powers toward its own advantages. Foreign aid and security cooperation globally help stabilize those regions most advantageous to the security of U.S. national interests.

F. IS IT SOMETHING SPECIFIC FROM THE THIRD OFFSET STRATEGY?

Broadly stated, the Third Offset Strategy seeks to widen the strategic gaps between the United States and its competitors. Uniquely, the Third Offset does not seek a strategic advantage through specific weaponry advances or warfare methods. Instead, the strategy directs innovation through alternative avenues. While such activity might secure the United States' superiority, that security should be viewed as temporary. Subsequent chapters of this thesis will show that the near-peer competitors of the United States are taking very similar steps with comparable levels of success. This means that reliance on the Third Offset alone for supremacy is ill-advised.

G. IS IT THE EFFICACY OF THE U.S. MILITARY-INDUSTRIAL COMPLEX?

The Third Offset Strategy directs the leveraging of both the military and industrial bases to rapidly innovate, develop, source, and field advanced technology for homeland defense purposes. A distinct advantage the United States holds with the Third Offset is the interconnectedness of its military-industrial complex—that is, the relationships between the armed forces and the commercial industries that support the military.¹⁰⁵ Both sides benefit from this relationship: the defense industries never lack a customer base, and the military is constantly supplied with the most advanced warfare technologies. Together, the two bodies influence public policy by showing that the United States is willing to pay any

¹⁰⁵ Andrew J. Bacevich (ed.), *The Long War: A New History of U.S. National Security Policy since World War II* (New York: Columbia University Press, 2007), 335, <http://www.jstor.org/stable/10.7312/bace13158>.

cost to prevail. In terms of the Third Offset, the military-industrial complex provides the opportunity for U.S. superiority by driving the constant need for improved defense technologies developed by the commercial industry.

The U.S. advantage with the military-industrial complex comes from the freeness of its society, which enables to the United States to attract and retain the requisite talent for advanced technological innovations.¹⁰⁶ U.S. trade practices, immigration laws, and national security policies help posture the United States for technological superiority by providing an environment most conducive and attractive to the best and brightest minds in the field.¹⁰⁷ U.S. superiority comes not from the amount of financial resources invested in innovation but from the recruiting and retention of subject matter experts for innovation.

The U.S. military-industrial complex also yields a greater return on investment in its production bases. China has a much larger manufacturing industry, but the United States continues to outpace China in conventional warfare and power-projection capacities.¹⁰⁸ The profitability of defense production can lead to the unintended consequences of altering economies. As manufacturers pivot toward defense weapons production, manufacturing of civilian products is outsourced (or shifted entirely) overseas.¹⁰⁹ U.S.-led tariffs and trade wars could prove disastrous if the United States becomes too dependent on international trading partners for the manufacturing of all aspects of the American way of life, except the defense industry.

While the U.S. military-industrial complex may provide the United States with a distinct strategic advantage over competing states, it has also prolonged engagements in some of the bloodiest wars in U.S. history. The industrial communities continue to develop warfare technologies for sale to the DoD because it is a lucrative practice. Defense spending, in turn, continues to support the purchasing of warfare technologies as a means

¹⁰⁶ Schwartz, “The U.S. Faces an Innovator’s Dilemma.”

¹⁰⁷ Schwartz.

¹⁰⁸ Louis Uchitelle, “The U.S. Still Leans on the Military-Industrial Complex,” *New York Times*, September 22, 2017, <https://www.nytimes.com/2017/09/22/business/economy/military-industrial-complex.html>.

¹⁰⁹ Uchitelle.

to buy superiority (whether or not there is a catalyst). This subsequently drives the industries to continue to produce and sell, which causes defense budget increases, and so the cycle perpetuates.¹¹⁰ The profits of the industrial base can cloud the political visions of war and international relations. Companies like Brown and Root (overseas construction) and Dow (weaponized chemical development) greatly profited from the prolonged involvement of U.S. forces in the Vietnam War, while escalation immediately to nuclear warfare (with industrially produced weapons) was the easy answer to crises in Korea and Cuba.¹¹¹

H. CONCLUSION

This chapter explored the supremacy of the United States. For this thesis, it is important to understand what ensures the supremacy of the United States because supremacy is (or should be) the intended goal of an offset strategy. While this chapter analyzed a series of questions regarding the supremacy of the United States, it may be difficult to accurately attribute any one factor as the decisive point for U.S. supremacy. More likely is that the United States' source of supremacy comes from its acumen in leveraging all these factors (and others) in combination toward its national security.

¹¹⁰ James Fallows, "The Military-Industrial Complex," *Foreign Policy*, no. 133 (November 2002): 46–48, <http://search.proquest.com/docview/60603748/>.

¹¹¹ Fallows, 46.

V. CONDITIONS THAT (WILL) DEGRADE THE THIRD OFFSET STRATEGY

This chapter explores those conditions that, if present, degrade the strategic advantage provided by the Third Offset Strategy. If decision-makers understand these conditions, they can engage in the requisite planning needed to both prolong the Third Offset and prepare for its replacement. Being proactive about this planning will allow the DoD to maintain the strategic advantage (instead of being forced to regain it).

A. OVER-RELIANCE ON TECHNOLOGY-BASED SOLUTIONS

Due to the nature of competitive innovation, much of the Third Offset focuses on advanced technologies. The following sections detail the vulnerabilities of the Third Offset's heavy reliance on technological solutions for homeland defense. These include an increased vulnerability to espionage (particularly cyber espionage), enhanced susceptibility to intellectual property theft, and the false faith placed in technologies that have yet to be discovered.

1. Vulnerability to Espionage

Perhaps one of the biggest threats to the longevity of the Third Offset Strategy is its vulnerability to competitor espionage activity. Adversaries, particularly China, have proven extremely successful at the dark art of international espionage for the purposes of capturing U.S. military secrets. This is especially true in the cyberspace domain, where experts describe the United States as “under attack by digital bombs.”¹¹² Skeptics of the Third Offset believe the prowess of the Chinese espionage program will lead (or already has led) to the capture, copy, and proliferation of the strategic advantage through the theft of the strategy's classified technology.¹¹³ These fears are not unfounded. By 2013, Chinese

¹¹² Rep. Michael McCaul (R-TX) as quoted in Charles Cooper, “House Hearing: U.S. Now Under Cyber Attack,” CNET, April 24, 2012, <https://www.cnet.com/news/house-hearing-u-s-now-under-cyber-attack/>.

¹¹³ Andrew Davies, “US Military's Third Offset Strategy: A Silver Bullet or Simply a Bad Idea?” *The National Interest* (blog), August 3, 2016, <http://nationalinterest.org/blog/the-buzz/us-militarys-third-offset-strategy-silver-bullet-or-simply-17227>.

hackers had stolen U.S. design information for more than two dozen classified advanced weapons platforms, including the F-35 Joint Strike Fighter.¹¹⁴ Due to the efficacy of foreign espionage activities, some defense experts argue that any strategic advantages gained by Third Offset technology will only be temporary until the security of the technology is compromised and the information proliferated.¹¹⁵

2. Susceptibility to Intellectual Property Theft

Another threat to the endurance of the Third Offset Strategy, similar to espionage, is intellectual property theft—the stealing of inventions, ideas, trade secrets, etc.¹¹⁶ Through the lens of the Third Offset Strategy, intellectual property theft entails the pilfering of advanced innovations and technologies relative to homeland defense priorities. Of the United States’ near-peer competitors, China is particularly adept in intellectual property theft. China’s use of advanced persistent threats (APTs) to burrow deep into networks and exploit sensitive or proprietary information makes the country especially dangerous to the Third Offset Strategy because so much of the strategy’s innovation occurs in the unclassified, commercial domain.¹¹⁷

The subtle differences between espionage and intellectual property theft become even more difficult to distinguish when the stolen intellectual property pertains to state-level functions like national security. For the purposes of this thesis, and relative to the Third Offset Strategy’s leverage of dual-use technological innovations, the difference between intellectual property theft and espionage remains very slight. The DoD response to both activities should be unified and should seek to preserve the innovative technologies of the Third Offset.

¹¹⁴ Ellen Nakashima, “Confidential Report Lists U.S. Weapons System Designs Compromised by Chinese Cyberspies,” *Washington Post*, May 27, 2013, https://www.washingtonpost.com/world/national-security/confidential-report-lists-us-weapons-system-designs-compromised-by-chinese-cyberspies/2013/05/27/a42c3e1c-c2dd-11e2-8c3b-0b5e9247e8ca_story.html?utm_term=.c751d1afdf86.

¹¹⁵ Davies, “US Military’s Third Offset Strategy.”

¹¹⁶ “Intellectual Property Theft/Piracy,” Federal Bureau of Investigation, accessed October 27, 2018, <https://www.fbi.gov/investigate/white-collar-crime/piracy-ip-theft>.

¹¹⁷ Peter Warren Singer and Allan Friedman, *Cybersecurity and Cyberwar: What Everyone Needs to Know*, Kindle edition (New York: Oxford University Press, 2014), loc. 1061.

3. Technology Yet to Be Discovered

Shortly after the 2014 announcement of the Third Offset Strategy, some security experts described then Secretary of Defense Hagel's Defense Innovation Initiative as "the fairy dust strategy" and claimed that the DoD had opted for an easy, yet wholly inadequate, method: offering nonexistent technology as the solution to widen the gaps between the United States and near-peer competitors.¹¹⁸ Such claims are not entirely unfounded; unlike its predecessors, the Third Offset does not direct the advancement or implementation of any specific, concrete technologies. This broad, open strategy stipulates that the United States should widen the superiority gaps with competitors through advanced innovations, without much guidance as to how.

This may be to the benefit of the Third Offset, as it enables the greatest degree of flexibility and initiative. But it also places the fate of national security into inventions that do not (presently) exist. In this sense, the Third Offset mistakes goals for strategy.¹¹⁹ The goal of the Third Offset is to establish a strategic advantage by developing superior technology; however, the strategy fails to clearly specify the leadership and conditions required to realize this goal. The significance of the over-reliance on yet-to-be-discovered technologies is especially of concern when considering that the near-peer competitors of the United States are not stagnant with their own technological innovations and advances. As this chapter later demonstrates, Russian and Chinese activities mirror (and in some cases outnumber) the United States' efforts to innovate defense technologies. They too are working to establish their own strategic advantages over the United States and its allies. Effectively, the DoD has established *hope* as a course of action to gain a strategic advantage—hope that United States will discover breakthrough technologies first. The DoD has failed to face the problem by not clearly analyzing the obstacles and aligning the strategy to address them.¹²⁰

¹¹⁸ James Carafano, "The Third Offset: The 'Fairy Dust' Strategy," The Heritage Foundation, November 25, 2014, <https://www.heritage.org/defense/commentary/the-third-offset-the-fairy-dust-strategy>.

¹¹⁹ Richard Rumelt, "The Perils of Bad Strategy," *McKinsey Quarterly* (June 2011), <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-perils-of-bad-strategy>.

¹²⁰ Rumelt.

B. FUNDING AND AUTHORITIES

Beyond the advanced technological concerns for the Third Offset, the strategy may also become constrained by resource funding and authorization limitations. This section describes the impacts to the Third Offset Strategy caused by the persistent fiscal constraints of the current operating environment, the DoD's competing homeland defense priorities, the unclear objectives guiding the strategy, and the role that national willingness to accept policies plays in the development and employment of the Third Offset.

1. Persistent Fiscal Constraints

The defense budget operates cyclically; it increases during periods of conflict and threats (real or perceived) and decreases during periods of peace.¹²¹ The current budgetary trends of the DoD reflect increases. However, the budget supports an overall smaller force than in previous fiscal years.¹²² Overall, the current defense budget projections allocate the majority of spending toward maintaining the force and growing conventional capabilities, not Third Offset innovations.¹²³ Changing administration priorities may prove to be one of the biggest fiscal constraints to the Third Offset Strategy.

In 2016 President-elect Donald Trump's campaign promised to bolster the military with substantial increases in both personnel and equipment. Some defense experts argue that these promises were not in cadence with the Third Offset Strategy initiatives.¹²⁴ The DoD may find funding supportable for either this extreme conventional military capability plus-up or for development of Third Offset priorities, but not for both. To combat these competing priorities, the administration's fiscal year 2018 defense budget request sought a 14 percent increase in research, development, testing, and evaluation (RDT&E)

¹²¹ Todd Harrison and Seamus P. Daniels, *Analysis of the FY 2019 Defense Budget* (Washington, DC: Center for Strategic and International Studies, September 2018), https://csis-prod.s3.amazonaws.com/s3fs-public/publication/180917_Harrison_DefenseBudget2019.pdf?uUH.v7t_nXrNnkX01631tlu7IGamFle9.

¹²² Harrison and Daniels.

¹²³ Harrison and Daniels.

¹²⁴ Theodore R. Johnson, "Will the Department of Defense Invest in People or Technology?" *The Atlantic*, November 29, 2016, <https://www.theatlantic.com/politics/archive/2016/11/trump-military-third-offset-strategy/508964/>.

allocations, with an emphasis on late-stage work on Third Offset innovations.¹²⁵ While 14 percent of the DoD's budget is no small figure, it may not be enough to fully develop the innovative technologies of the Third Offset Strategy.

2. Competing Homeland Defense Priorities

While Third Offset innovations seek to establish and maintain a strategic advantage over near-peer competitors, they are also not the sole priorities of the DoD. In 2018 the DoD announced its intentions to field the creation of a Space Force by 2020.¹²⁶ The United States' (and arguably the planet's) dependency on the stability and availability of the space domain for everything from commerce and communication to intelligence and security firmly establishes space as key terrain. Adversarial states acknowledge the relevance of the space domain as well.¹²⁷ Stacking the priority of a Space Force on par with the Third Offset, however, detracts from the perceived significance of fully developing the strategy.

The over-extension and misalignment of DoD priorities also distracts focus from the development of Third Offset innovations. Requests for defense support to civil authorities (DSCA) in response to emergencies in the homeland remains a persistent possibility.¹²⁸ Outside the homeland, the U.S. military's tasks to provide humanitarian aid and disaster response (HADR) serve to build the international relations and influence of the United States. While these missions are no less critical to supporting and defending the homeland, they are not the primary missions of the DoD.¹²⁹ Furthermore, many of these missions are executed under service authorities, meaning that the individual branches of

¹²⁵ William Thomas, "Trump Budget Cuts Defense S&T by 5.8% While Funding Third Offset Priorities," American Institute of Physics, June 1, 2017, <https://www.aip.org/fyi/2017/trump-budget-cuts-defense-st-58-while-funding-third-offset-priorities>.

¹²⁶ Valerie Insinna, "Pentagon Presents Recommendations on Space Force to Trump," Defense News, October 23, 2018, <https://www.defensenews.com/space/2018/10/23/pentagon-presents-recommendations-on-space-force-to-trump/>.

¹²⁷ Todd Harrison, Kaitlyn Johnson, and Thomas G. Roberts, *Space Threat Assessment 2018* (Washington, DC: Center for Strategic and International Studies, 2018), https://aerospace.csis.org/wp-content/uploads/2018/04/Harrison_SpaceThreatAssessment_FULL_WEB.pdf.

¹²⁸ Joint Chiefs of Staff, *Defense Support of Civil Authorities*, JP 3-28 (Washington, DC: Joint Chiefs of Staff, 2018), https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_28.pdf.

¹²⁹ "Our Story," Department of Defense, accessed January 12, 2019, <https://www.defense.gov/Experience/Our-Story/>.

the military, or the DoD itself, funds the support. This places the DoD in an awkward position of choosing between investing in Third Offset innovations or funding a military operation in support of a civil authority response to crises.

Beyond the military's support to crisis response at home and abroad, nation-building is another competing requirement of homeland defense forces. Military presence remains one of the primary tools of best practice for U.S. nation-building efforts in conflict areas.¹³⁰ As U.S. involvement in conflict areas continues to grow over time, so too does the requirement for military occupational forces overseas. These missions are not entirely devoid of homeland defense benefits, as they help secure global stability and early threat detection and mitigation.¹³¹ Nevertheless, despite their benefits, these missions persistently detract the DoD's focus and resources from Third Offset innovation development.

3. Unclear Objectives

An effective strategy, according to B.H. Liddell Hart, artfully distributes and applies military power to reach policy objectives.¹³² In applying Hart's concept, some military strategists claim that the Third Offset is actually not a strategy at all (or at least not a complete strategy) and that it will not automatically guarantee the United States' victory in the next major war.¹³³ Art Lykke believes that an effective military strategy for national security must have clearly defined objectives (*ends*), concepts to achieve those objectives (*ways*), and resources allocated to execute those concepts (*means*).¹³⁴ The direction provided by the Third Offset guides the development of a *means*, but the strategy fails to

¹³⁰ James Dobbins et al., *America's Role in Nation-Building: From Germany to Iraq*, MR-1753-RC (Santa Monica, CA: RAND, 2003), https://www.rand.org/pubs/monograph_reports/MR1753.html.

¹³¹ Daniel F. Runde and Conor M. Savoy, *Nation Building by Any Other Name* (Washington, DC: Center for Strategic and International Studies, 2017), <https://www.csis.org/analysis/nation-building-any-other-name>.

¹³² Basil Henry Liddell Hart, *Strategy* (New York: Praeger, 1954), 231.

¹³³ Cavanaugh, "False Faith."

¹³⁴ H. Richard Yarger, "Towards a Theory of Strategy: Art Lykke and the Army War College Strategy Model," United States Air Force Air War College, accessed March 7, 2019, <http://www.au.af.mil/au/awc/awcgate/army-usawc/stratpap.htm>.

clearly identify what the *ends* are; nor does it describe the *ways* in which the means are to be applied to accomplish the ends. Simple ownership of superior technology alone does not guarantee operational success or supremacy, as the recent U.S. engagements in Iraq and Afghanistan demonstrated.¹³⁵ Lacking a clearly stated objective and well-defined guidance for the application of technologies to achieve it, the Third Offset Strategy is incomplete.

4. Willingness to Employ: Why Build it If You'll Never Use It?

For all of its innovation and development of game-changing technology, the Third Offset Strategy could suddenly prove obsolete if the requisite national will to use it wanes. With the searing images of August 6, 1945—the atomic bombings of Hiroshima and Nagasaki—imprinted on the minds of the international community, it is inconceivable that the United States would ever again deploy warfare technology as destructive and devastating as the atomic bombs.

Conversely, the nation is only beginning to understand the broad implications of Russian and Chinese cyber-attack capabilities, especially as they pertain to the disruption of sovereign processes like voting and commerce. These examples are at the extremes of the kinetic and non-kinetic spectrums, but they may also serve to adversely affect the appetite of the American people and policy-makers to use Third Offset innovations for homeland defense. For all of its focus on innovative, revolutionary technologies for warfare, the Third Offset Strategy may defeat itself if the nation proves unwilling to actually deploy the weaponized technology it produces. For example, the DoD could leverage Third Offset deep-learning systems to develop the capabilities for a *cyber Pearl Harbor* attack. This could provide the United States with the potential for a strategic advantage over China and Russia. If the American people and policy-makers interpret that such an attack would violate the principles of lawful war, then such an attack is unlikely to ever be used and thus

¹³⁵ Cavanaugh, “False Faith.”

provides no strategic advantage.¹³⁶ Military necessity, unnecessary suffering, proportionality, and distinction remain the criteria against which all U.S. military action must be measured.

C. NEAR-PEER ACTIONS TO ACHIEVE PARITY

Countering parity with near-peer competitors is an ongoing, ever-adaptive process. Adversaries (or competitors) do not stay stagnant and continually adapt and fluctuate to attain their own strategic advantages. U.S. military strategists evaluating the Third Offset Strategy need to remain cognizant of this fact because strategic advantages are temporary (comparatively speaking). Reliance on a strategic advantage (or an offset strategy) that is no longer valid may prove detrimental. This section analyzes the Chinese and Russian responses to the Third Offset Strategy in order to evaluate the potential resulting degradations to the strategy.

1. The Chinese Response to the Third Offset

China has a diverse and complex system of national interests that align with the security and defense of its statehood, economy, and regional influence. The core Chinese national interests, as previously stated, are preserving Chinese sovereignty, securing the state of China, regaining the integrity and reunification of Chinese territories, safeguarding China's political and social systems, and ensuring an enduring economy.¹³⁷

Central to supporting its national security interests is China's use of cyber espionage and cyber-attack capabilities.¹³⁸ Most of the detected Chinese cyber operations against U.S. private industries have targeted defense contractors, while China's Strategic Support Force continues to advance its militarized cyber-attack and espionage

¹³⁶ Department of Defense, *Law of War Manual* (Washington, DC: Office of General Counsel, 2016), http://permanent.access.gpo.gov/gpo71097/DoD_Law_of_War_Manual-June_2015_Updated_May_2016.pdf.

¹³⁷ Information Office of the State Council, *China's Peaceful Development*.

¹³⁸ Daniel R. Coats, *Worldwide Threat Assessment of the U.S. Intelligence Community* (Washington, DC: Director of National Intelligence, 2018), <https://www.dni.gov/files/documents/Newsroom/Testimonies/2018-ATA---Unclassified-SSCI.pdf>.

capabilities.¹³⁹ This recent reinvigoration of Chinese cyber-attack capacities on U.S. military industries is undoubtedly an attempt to discover Third Offset technological innovations.

Due to deep-seated distrust of U.S. intentions, it is possible the Chinese will not respond energetically to the Third Offset Strategy.¹⁴⁰ Chinese officials may misinterpret the strategy as an attempt by the United States to lure China into a competitive technology arms race in which the United States has a distinct advantage due to its vast resources and industrial bases.¹⁴¹ Another possibility is that the Chinese may believe the Third Offset Strategy is a hollow ruse by the United States to mask its own deficiencies with promises of innovative technology.¹⁴² Whatever China's response, it is unlikely to deviate far from the country's long-term goal to rejuvenate its national power status; China will likely invest in Third Offset-like technologies to minimize the innovation gaps between U.S. and Chinese military capabilities.¹⁴³

The most likely Chinese response to the Third Offset Strategy is a campaign of espionage, theft, and replication. China's National Medium- and Long-Term Plan for the Development of Science and Technology (which covers 2006 through 2020), or MLP, places great emphasis on improving and reinventing imported technology.¹⁴⁴ Instead of competing with the U.S. industry and innovation processes, China will likely focus on a model of introduce, digest, assimilate, and re-innovate (IDAR) that centers on recovering, modifying, and proliferating U.S. next-generation, Third Offset technologies.¹⁴⁵ Such a strategy is, effectively, sustainable indefinitely for the government of the People's Republic

¹³⁹ Coats.

¹⁴⁰ Fan, *A Chinese Perspective*.

¹⁴¹ Fan.

¹⁴² Fan.

¹⁴³ Fan.

¹⁴⁴ James McGregor, *China's Drive for "Indigenous Innovation": A Web of Industrial Policies* (Washington, DC: Global Intellectual Property Center, 2010), https://www.uschamber.com/sites/default/files/documents/files/100728chinareport_0_0.pdf.

¹⁴⁵ Jon R. Lindsay, "The Impact of China on Cybersecurity: Fiction and Friction," *International Security* 39, no. 3 (Winter 2014/2015): 7–47, https://doi.org/10.1162/ISEC_a_00189.

of China. China need not invest resources in innovation and development of strategic advantage-gaining technologies; they merely need to wait for the United States to do so, then discover how to replicate it. This strategy of recovering, modifying, and proliferating U.S. technologies affords limited advantages: China depends on U.S. innovation to fuel its own re-innovation, and at best China attains parity with the United States (never surpassing it). Nevertheless, by perpetually pressing the United States with parity, China can effectively challenge the Third Offset Strategy by forcing a state of creative destruction.¹⁴⁶

That is not to say that the Chinese base their entire innovation process on mirror-imaging the United States'. China's significant investment and innovation in technological fields of A2AD and Assassin's Mace are clear efforts to undermine what the Chinese People's Liberation Army (PLA) believes to be U.S. strategic advantages.¹⁴⁷ Comparable to the Third Offset cornerstones of autonomy, unmanned platforms, and human-machine collaboration, the PLA is also investing heavily in similar technologies. PLA strategists see unmanned platforms as the future of warfare and believe that such operations will be semi-autonomous.¹⁴⁸ Additionally, China's heavy investment in quantum computing railguns and laser systems is further evidence of the country's intent to reduce the gap in strategic advantages between the United States and China.¹⁴⁹ *Creative destruction* is the theory that markets fail because, internally, they are in a perpetual state of change; markets therefore destroy old industries and innovate new industries to fulfill the changing demands of customers.¹⁵⁰ This reduces the stability of the innovation processes because the requirements are constantly fluctuating.¹⁵¹ This effect can be detrimental to competing

¹⁴⁶ Schumpeter, *Capitalism, Socialism & Democracy*, 83.

¹⁴⁷ David Hambling, "China Looks to Undermine U.S. Power, with 'Assassin's Mace,'" *Wired*, July 2, 2009, <https://www.wired.com/2009/07/china-looks-to-undermine-us-power-with-assassins-mace/>; Peter Wood, *In a Fortnight: Chinese Perceptions of the "Third Offset Strategy"* (Washington, DC: The Jamestown Foundation, 2016), https://jamestown.org/wp-content/uploads/2016/10/CB_16_15.pdf?x87069.

¹⁴⁸ Elsa Kania and Kenneth Allen, *The Human and Organizational Dimensions of the PLA's Unmanned Aerial Vehicle Systems* (Washington, DC: The Jamestown Foundation, 2016), https://jamestown.org/wp-content/uploads/2016/05/CB_16_8_1.pdf?x87069.

¹⁴⁹ Wood, *In a Fortnight*.

¹⁵⁰ Schumpeter, *Capitalism, Socialism & Democracy*, 83.

¹⁵¹ Schumpeter, 83.

states because the costs of long-term innovation competitions far outweigh the short-term innovative technology gains.¹⁵²

China's preexisting military modernization has built, and continues to build, capacity and capability to challenge the United States.¹⁵³ Chinese advances in late-generational aircraft platforms parallel those of the United States, creating a situation of approximate parity in air superiority with China.¹⁵⁴ The absence of air superiority notwithstanding, the Chinese further modernized their air defense capabilities toward negation of U.S. air penetration advantages.¹⁵⁵ China's attainment of partial parity extends beyond the domain of air and includes space. Chinese counter-space capabilities represent a competitive threat to the United States and its heavy reliance on network-enabled systems.¹⁵⁶

2. The Russian Response to the Third Offset

While Moscow's less-than-transparent politics complicate efforts to clearly define Russian national interests, experts agree that principal Russian national interests, as previously stated are, stopping the use of nuclear or mass-destruction weapons against former Soviet territories (including Russia itself), attaining deterrence through nuclear superiority, preventing terrorism in Russia, maintaining influence over former Soviet states while degrading outside influences in those region(s), achieving economic growth from the exportation of energy, preserving the Russian political system(s), and advancing the Russian elites' major economic and political-business alliances.¹⁵⁷

¹⁵² Lee et al., "Hidden Cost of Strategic Alliances," 36–37.

¹⁵³ China's military modernization was one of the driving factors to retire the Second Offset Strategy and implement the Third Offset Strategy.

¹⁵⁴ Eric Heginbotham et al., *The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996–2017*, RR-392-AF (Santa Monica, CA: RAND, 2015), <https://doi.org/10.7249/RR392>.

¹⁵⁵ Heginbotham et al.

¹⁵⁶ In this context *counter-space* references the ability to interfere with or prevent the use of orbital satellite capabilities. Heginbotham et al.

¹⁵⁷ Task Force on Russia and U.S. National Interests, *Russia and U.S. National Interests*.

The Russians see their strategic and tactical nuclear weapons as their strategic advantage. Despite economic recessions, Russia remains at the forefront of nuclear weapons development and production despite spending a mere 5 percent of its defense budget on this initiative.¹⁵⁸ Russia continues to develop and advance its strategic nuclear weapons program as a means to avoid the constraints of the U.S. ballistic missile defense capabilities and to deter U.S. precision strikes against Russian interests.¹⁵⁹ In her April 2017 testimony before the Senate Armed Services Committee, U.S. Air Force General Lori Robinson (then commander of U.S. Northern Command and North American Aerospace Defense Command) acknowledged the growing capability and increased threat of Russian ballistic missiles ranging North America.¹⁶⁰ As of 2018, the director of national intelligence has assessed that Russia's new ground-launch cruise missiles provide the necessary military advantage to continue noncompliance with international treaties without fear of repercussions.¹⁶¹

Russia's reliance on nuclear options notwithstanding, the country's proclivity and proficient use of hybrid warfare represents a significant concern for competitors like the United States.¹⁶² Russia's use of active measures, such as cyber attacks against Estonia in 2007 and again in 2014 as a precursor to military operations to seize the Crimea, represent a revolutionary method of warfare—particularly as Russia seeks to regain its influence over former Soviet states.¹⁶³ Russia's continued regional employment of these hybrid warfare

¹⁵⁸ Kashin and Raska, *Countering the U.S. Third Offset Strategy*.

¹⁵⁹ Vasily Kashin, *Russian Perspectives on the Third Offset Strategy and Its Implications for Russian-Chinese Defense Technological Cooperation* (San Diego: University of California Institute on Global Conflict and Cooperation, 2017), <https://cloudfront.escholarship.org/dist/prd/content/qt2dh5c1nh/qt2dh5c1nh.pdf?t=om3onb>.

¹⁶⁰ 115th Cong., 1st Sess. (statement of General Lori J. Robinson, United States Air Force Commander, United States Northern Command and North American Aerospace Defense Command Before the Senate Armed Services Committee) (April 6, 2017), <http://www.northcom.mil/Portals/28/NC%202017%20Posture%20Statement%20Final.pdf?ver=2017-04-06-110952-160>.

¹⁶¹ Coats, *Worldwide Threat Assessment*.

¹⁶² In this context, *hybrid warfare* refers to Russian campaigns to discredit security commitments or discredit domestic politics through coercion, intimidation, and subversion.

¹⁶³ David Ochmanek et al., *U.S. Military Capabilities and Forces for a Dangerous World: Rethinking the U.S. Approach to Force Planning*, RR-1782-1-RC (Santa Monica, CA: RAND, 2017), https://www.rand.org/pubs/research_reports/RR1782.html.

tactics potentially serves as a testing and evaluation platform to validate the capabilities against larger adversaries (i.e., the United States and other NATO nations).

Much like the DoD, the Russians are also exploring advanced unmanned platforms as well as sourcing innovation institutions to help discover next-generation technologies.¹⁶⁴ The Russian Advanced Research Foundation holds a similar mission purpose as DARPA: to research and develop high-risk, high-payoff technologies including artificial intelligence, unmanned vehicles, and cognitive technologies, among other next-generation capabilities.¹⁶⁵ Russia previously demonstrated atypical warfare capabilities with its cyber attacks in Estonia (2007), the invasion of the Republic of Georgia (2008), and annexation of the Crimea (2014).¹⁶⁶ Though all these actions predate the publication of the Third Offset Strategy, they indicate Russian testing of cyber warfare tactics. The lessons learned and best practices discovered during these events were (and are) no doubt leveraged against the United States.¹⁶⁷

Potentially less a response to the Third Offset Strategy, but congruent to it, is Russia's growing cooperation with China. Russian companies are increasingly sub-contracted for Chinese defense research and development, the Russians and the Chinese are jointly producing next-generation defense projects, and the Russians are trending toward greater importation of Chinese platforms for Russian defense priorities.¹⁶⁸ By building alliances with China, both nations may be seeking to counter the Western regional hegemonies and reestablish their spheres of influence.

¹⁶⁴ Kashin, *Russian Perspectives on the Third Offset Strategy*.

¹⁶⁵ Kashin and Raska, *Countering the U.S. Third Offset Strategy*.

¹⁶⁶ Tim Maurer and Scott Janz, *The Russia-Ukraine Conflict: Cyber and Information Warfare in a Regional Context* (Zurich, Switzerland: Center for Security Studies, 2014), https://www.files.ethz.ch/isn/187945/ISN_184345_en.pdf.

¹⁶⁷ Federal Bureau of Investigation and Department of Homeland Security, *GRIZZLY STEPPE—Russian Malicious Cyber Activity*, JAR-16-20296A (Washington, DC: Department of Homeland Security, 2016), https://www.us-cert.gov/sites/default/files/publications/JAR_16-20296A_GRIZZLY%20STEPPE-2016-1229.pdf.

¹⁶⁸ Federal Bureau of Investigation and Department of Homeland Security.

Perhaps the most visible way that the Russians are countering the Third Offset Strategy is through their continued, and unimpeded, provocation of the United States.¹⁶⁹ By continuing their provocative incursions to the United States and its sovereignties without triggering an energetic response from the United States (i.e., either a conventional military response or a response with weaponized Third Offset technology), Russia has effectively de-fanged the U.S. homeland defense enterprise. The unanswered aggressions toward the United States further embolden the Russians while validating that the United States is willing to build superior warfighting capabilities, but is not willing to actually use them. Every unanswered instance of Russian incursion on U.S. sovereignties further substantiates that the United States may hold the strategic advantages, but they will not use them. The Russians see this and continue to challenge the United States' supremacy.

3. Other Nations' Responses to the Third Offset

To face its future challenges, the United States must have strong international relationships, partnerships, and alliances.¹⁷⁰ But what happens if, by widening the technology gaps with competitors, the United States inadvertently widens the technology gaps with its allies? Such a discrepancy degrades the overall supremacy of the United States and also potentially places its allies at risk from U.S. near-peer competitors. Perceivably, one of two options resolves this situation. Either European nations invest more into Third Offset technologies, or the United States shares its strategic innovations with its European allies.¹⁷¹ European nations are unwilling, or unable, to provide significant investment toward research and development of U.S. Third Offset technologies, precluding the first option. Resident barriers to technology-sharing constrain the second option.¹⁷² These limitations foretell a scenario wherein the United States potentially holds a

¹⁶⁹ Frederick Kagan and Catharine Harris, "The United States Must Take Swift Action to Stop Russia's Aggression," *The Hill*, March 7, 2018, <http://thehill.com/opinion/international/377195-the-united-states-must-take-swift-action-to-stop-russias-aggression>.

¹⁷⁰ Michael Miklaucic, "Allies, Alliances, and the Fourth Strategic Offset," Real Clear Defense, August 10, 2018, https://www.realcleardefense.com/articles/2018/08/10/allies_alliances_and_the_fourth_strategic_offset_113706.html.

¹⁷¹ Fiott, "Europe and the Pentagon's Third Offset Strategy," 29.

¹⁷² Security classifications, proprietary practices, etc. Fiott, 29.

significant innovation lead over friend and foe alike, seeding the international relations terrain with distrust and resentment.

D. SUMMARY

This chapter offered an analysis of the conditions that will degrade (or are currently degrading) the strategic advantage afforded by the Third Offset Strategy. The strategy is heavily reliant on technology-based solutions, which makes it vulnerable to espionage and susceptible to foreign-nation intellectual property theft. The dependency on technology also relies heavily on innovations that do not yet exist. The funding and authorities constraints also challenge the relevancy of the Third Offset. Persistent fiscal constraints pit investment in Third Offset innovations against operation and maintenance allocations. Competing homeland defense priorities detract DoD focus from the Third Offset Strategy, which already lacks a clear vision and specific objectives. Finally, this chapter presented case studies showing that the near-peer competitors of the United States (i.e., China and Russia) have already taken great steps toward countering the Third Offset Strategy.

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VI. FINDINGS, RECOMMENDATIONS, AND CONCLUSIONS

This chapter consolidates the findings of the research of the Third Offset Strategy to assess the conditions that will render (or already have rendered) the strategy obsolete. These conditions, if met comprehensively or independently, should trigger the DoD to resign the Third Offset. This chapter also offers recommendations for the DoD to reinforce the Third Offset to prolong its strategic advantages and afford the requisite time to develop the next offset strategy. Finally, this chapter provides conclusions about the relevancy of the Third Offset Strategy. These conclusions will also highlight the limitations of the research and describe opportunities for additional research.

A. THE CONDITIONS THAT TRIGGER OBSOLESCENCE OF THE THIRD OFFSET STRATEGY

The conditions that will render the Third Offset Strategy obsolete are not finite and should be considered holistically relative to how they will affect the supremacy of the United States. Near-peer state activity to attain parity with Third Offset warfare capabilities may not automatically trigger a replacement of the strategy; however, if that parity could effectively challenge the U.S. strategic advantage then these actions indicate obsolescence.

1. Espionage and Intellectual Property Theft

The ever-present threat of information compromise at the hands of foreign entities is a reality that the DoD must deal with independent of the offset strategies. The aptitude of our adversaries to uncover clandestine U.S. projects infers that our national secrets are only cryptic temporarily. If the DoD finds itself sacrificing the majority of its Third Offset innovations to foreign actor espionage and intellectual property theft activities, the Third Offset Strategy becomes obsolete.

2. Reliance on Yet-to-Be-Discovered Technology

Because the Third Offset does not specify the innovation and development of any specific technologies or capabilities, it is difficult to effectively project when the strategy will be fulfilled. Congruently, the vagueness of the Third Offset entices the DoD into a

Sisyphean loop of perpetually innovating advanced warfare technologies only to discover that the Chinese, Russians, or others have already beaten the United States to the punch. Opportunities for innovation are infinite; however, the Third Offset Strategy is obsolete if the DoD cannot focus its innovation and industrial bases' energies on pivotal national security objectives. Relying on future technologies to solve the problems of today is insufficient.¹⁷³

3. Persistent Fiscal Constraints

While it may be impossible to place an acceptable price on national security, the Third Offset Strategy cannot become the ubiquitous pit into which unrecoverable resources sink. If DoD investments in Third Offset innovations do not effectively mature to produce an appreciable deterrent value—which is quantifiable as the containment of state-level aggression against the United States—then the strategy has become obsolete.¹⁷⁴

4. Competing Homeland Defense Priorities

The broad scope of mission sets for the U.S. military toward continues to grow and is unlikely to relent in the near future. The Third Offset should be deemed obsolete if the U.S. military's engagement in detracting homeland defense missions precludes its ability to exploit and capitalize upon the strategic advantages afforded by the strategy.

5. Unclear Objectives

By design, the Third Offset Strategy does not overtly name an opposing force or enemy. This has enabled a greater degree of flexibility to leverage the Third Offset against state and non-state actors alike. The problem, however, is that this anonymity of goals prevents concerted efforts toward a unified objective. If Third Offset innovations, as a whole, do not contribute directly and purposely to the attainment of national defense objectives, as specified in the National Security Strategies, then the Third Offset Strategy is obsolete.

¹⁷³ Rumelt, "The Perils of Bad Strategy."

¹⁷⁴ This is a working definition of deterrence for the purposes of this thesis.

6. Willingness to Fully Employ

Fluctuations in the national will are another factor that may significantly impact the relevancy of the Third Offset Strategy. Third Offset innovations must conform to the parameters of acceptable warfare that the nation is willing to fully employ. If, under the pretense of the Third Offset, the DoD develops an innovation so destructive and devastating that public opinion and/or political pressure preclude ever using such a weapon, then the strategy is no longer relevant.

7. Near-Peer Parity

Near-peer competitor attainment of parity cannot be a criterion for the obsolescence of the Third Offset Strategy. Instead, parity should be viewed as a failure of the strategy itself. Should the near-peer competitors of the United States attain parity, the United States loses its strategic advantage. The historical trend of reactivity demonstrated throughout the retirements and replacements of the First and Second Offset Strategies is a risk to national security that the United States cannot afford. The tempo at which near-peer competitors are able to adapt and innovate to negate U.S. strategic advantages and attain their own advances creates an unforgiving environment where a missed opportunity by the United States to advance its supremacy may be unrecoverable.

8. Too Wide a Technology Gap with Allies

The Third Offset Strategy is U.S.-centric. Much of the influence and power that the United States wields, however, comes not from the organic strength of its own military but from the massing of ally forces toward objectives. Many of the United States' most critical allies cannot (or are unwilling to) invest in Third Offset technologies at a pace comparable to the United States'. Further agitating the environment, security classifications or proprietary technologies may preclude the sharing of technologies between states (even within the same alliances). This may broaden the technology gaps between not only the United States and its near-peer competitors but also between the United States and its closest allies. If the Third Offset builds an advanced technology gap so wide that it degrades the United States' strategic alliances, then the strategy is no longer relevant and, in fact, becomes a hindrance to national security.

B. RECOMMENDATIONS FOR THE DEPARTMENT OF DEFENSE

The following recommendations, if implemented by the DoD, could prolong the strategic advantage afforded by the Third Offset Strategy. Offset strategies do not endure; at some point the Third Offset will lose relevancy and need to be replaced. The goal of these recommendations is to extend the strategic advantage of the Third Offset to buy time for the DoD to develop its replacement.

1. Countering Intellectual Property Theft and Cyber Espionage

To combat the growing, aggressive threats of Chinese intellectual property theft and cyber espionage, the DoD should adopt a modified variant of Shultz and Saporito's "do nothing" strategy.¹⁷⁵ Innovative technology is highly dynamic and subject to short life cycles. Some innovations become obsolete so fast that it is not cost effective to even fully investigate how the data were compromised. There is a fine line between investigating how the information was stolen and dwelling on the past.¹⁷⁶ Once discovered, the DoD should investigate the intellectual property theft to determine its origins and extent. The DoD should fight impulses to immediately discard all of the stolen technologies and start anew in the innovation process. Adversaries are unlikely to reduce their intellectual property theft efforts, and are likely to proliferate the stolen technology as broadly as possible.¹⁷⁷ This gives the DoD the opportunity to effectively weaponize the creative destruction process.¹⁷⁸

Say, for example, that a near-peer competitor steals the nascent plans for a U.S. fifth-generation fighter jet.¹⁷⁹ The United States has two options: abort or adapt. The first option is to cease all productions of fifth-generation fighters and begin work to innovate new fighter jet capabilities. This option places the United States in the disadvantageous

¹⁷⁵ Clifford J. Shultz II and Bill Saporito, "Intellectual Property: Strategies and Recommendations to Deter Counterfeiting and Brand Piracy in Global Markets," *Columbia Journal of World Business* 31, no. 1 (1996): 22, [https://doi.org/10.1016/S0022-5428\(96\)90003-4](https://doi.org/10.1016/S0022-5428(96)90003-4).

¹⁷⁶ In order to remedy the leak.

¹⁷⁷ In search of parity.

¹⁷⁸ Schumpeter, *Capitalism, Socialism & Democracy*, 81–86.

¹⁷⁹ For the purposes of this demonstration, *fifth generation* describes stealth-capable aircraft.

position of *creative destruction*. The United States *destroys* all processes relative to the fifth-generation fighters, and begins *creation* of the next generation of aircraft. During this cycle, the United States wastes countless resources while gaining no strategic advantage. Meanwhile the competing state attains parity through the proliferation of fifth-generation aircraft, and expends no resources on organic innovation. They merely need to monitor the U.S. innovation process and wait for the opportune time to steal the new fighter specifications to force the United States back into the creative destruction cycle.

The other option is for the United States is to adapt to the compromise, which allows the competitor to proliferate the fifth-generation aircraft, and alter its tactics and doctrine to optimize the use of fifth-generation aircraft. Instead of destroying the fifth-generation innovations, the United States simply finds a better way to use them: coupling stealth capabilities with those of electronic warfare, integrating stealth aircraft operations with maritime capabilities to enhance the global power projection values, and equipping the fifth-generation aircraft with a vast array of munitions, making it a game-changing weapon of warfare. By taking these steps, the United States avoids the pitfalls of creative destruction while effectively forcing the near-peer competitor into its own creative destruction cycle. Now, the competing state has to expend resources to destroy and create if it wishes to contend with the United States.

The difficulty of this weaponization of the creative destruction process is that it is totally reliant upon defense planners to find alternative, more beneficial uses for the original (proliferated) technological innovations. Flexibility is often not the strongest trait of the DoD, but the department must remain agile and capable of pivoting into the destruction phase if a more optimal use for the innovation is not apparent. Such flexibility is, if attainable, a capable advantage that the DoD holds over near-peer competitors' militaries.

2. Countering the Reliance on Nonexistent Technologies

While the Third Offset places great significance on the development of advanced warfare technology in the future, conspicuously missing from the strategy is the topic of sustaining conventional warfare technologies. Many adversarial states, not just near-peer

competitors, believe their strategic advantages comes from robust nuclear weapons programs.¹⁸⁰ The theory of mutual assured destruction largely explains why the Cold War from did not escalate to a nuclear war, and the theory should remain equally relevant today. In short, the theory explains that nations would have no actual incentives to use their nuclear weapons if there was a credible threat that they would face a proportional counterattack. Put another way, the Soviets never used their nuclear weapons to attack Washington, DC, because they knew that if they did they should expect the United States to use its nuclear weapons to attack Moscow. In response to Moscow the Soviets would attack New York City, which would trigger the United States to attack St. Petersburg, and so on until both nations crumble.

The DoD should exercise caution to ensure that future offset strategies do not devolve back to their predecessors' forms.¹⁸¹ At the same time, the department must remain cognizant of the fact that nuclear weapons are the preferred weapons of our adversaries. If the United States relaxes its nuclear weapons program, it loses a significant deterrent against many of its potential adversaries.

Where mutual assured destruction theory failed, however, was in the deterrence of all hostilities. While effective at preventing the use of nuclear weapons, the theory failed to prevent the use of force below the nuclear level, including proxy wars.¹⁸² In conjunction with the aforementioned sustainment of nuclear programs, the DoD should advise leveraging offset strategy technology innovations against near-peer competitors to counter and deter non-nuclear activity. In doing so, the United States should remain cautious as it engages in such an innovation arms race with competitors. During the Cold War, the quest for nuclear superiority between the United States and the Soviet Union resulted in an all-out nuclear arms race.¹⁸³ If the United States is imprudent with its reliance upon, and investments in, innovative technologies, it could easily find itself disadvantaged in a

¹⁸⁰ Kashin and Raska, *Countering the U.S. Third Offset Strategy*.

¹⁸¹ That is, particularly, the First Offset Strategy.

¹⁸² Jervis, "Mutual Assured Destruction," 40.

¹⁸³ Glaser, "The Causes and Consequences of Arms Races," 76.

comparable arms race for technological superiority. A technology arms race of this nature is highly disadvantageous for both the United States and Russia. Schumpeter's theory of creative destruction says that innovative markets fail because, internally, they are in a perpetual state of change; they constantly destroy old industries and innovate new industries to suit the new demands of consumers.¹⁸⁴ This eternal destruction and building in the industry causes reduced market stability and results in limited innovation because the needs being filled constantly change.¹⁸⁵ After failure, innovative markets rebuild in revolutionary forms.¹⁸⁶ This means that an innovative technologies arms race could result in competition so fierce that extensive investments and developments result in no progress gained because technologies are overmatched as soon as they are fielded. This also means that the rebirths of defense innovation after failure could impact (positively or negatively) the economic, and other, instruments of national power beyond just the military force.

Moreover, the DoD should analyze the near-peer competitors of the United States through the lens of the Third Offset to focus its energy (and the subsequent energies of the innovation industries) on established strategic objectives for national security. Technology innovation for its own sake is dangerous. Listless investment in defense innovations, lacking the guiding principles of defined strategic objectives, drains valuable time and resources from defense priorities.

3. Countering the Cyber Threat

Lured into a false sense of security through deterrence, the U.S. intelligence community believes that fear of U.S. retaliation reduces the probability of large-scale cyber attacks against the homeland.¹⁸⁷ The inherently non-attributional and anonymous environment of cyberspace negates the deterrent value of any U.S. counter action in

¹⁸⁴ Schumpeter, *Capitalism, Socialism & Democracy*, 83. Schumpeter's theory of *creative destruction* was originally designed for economic and industrial business applications. The theory is equally applicable to national security by replacing "markets" with "security strategies," and "consumer needs" with "innovative technologies."

¹⁸⁵ Schumpeter, 83.

¹⁸⁶ Schumpeter, 83.

¹⁸⁷ Coats, *Worldwide Threat Assessment*.

retaliation of a cyber attack. The DoD should leverage Third Offset artificial intelligence systems toward autonomous machinery to focus not just on the defense of cyber attacks but also on perpetrator attribution.¹⁸⁸ Prosecution of state-sponsored (or state-directed) cyber attackers may not always result in military action; however, accurate and timely attribution is absolutely necessary for any manner of response.

Staying within the cyberspace domain, the DoD should approach the building of cyber deterrence capabilities with caution. The ensuing cyber arms race between the United States and competitors could easily result in what Matthew Crosston calls *mutually assured debilitation*.¹⁸⁹ This theory applies similar concepts as its ancestral mutual assured destruction theory: fear of retaliatory second strikes deters offensive actions.¹⁹⁰ The DoD should plan to adopt a two-pronged approach to cybersecurity: deterrence through robust cyber attack/counter cyber attack capabilities, and enhanced network hardening to reduce the feasibility of cyber attacks. This enhanced network security should not become so stringent that it inadvertently discourages the use of the network writ large. If the networks become so secure that they ultimately inhibit basic forms of communication (e.g., data transfers, electronic mail, video teleconferences), network users may defer to less efficient and less secure forms of communication (e.g., personal cell phones and electronic mail, open-source media).

4. Countering the Persistent Fiscal Constraints

The DoD should exercise patience and recognize that failure is a critical process of innovation. Constant funding competition may tempt the department to retire Third Offset innovations prematurely and reallocate resources to other initiatives; the DoD must resist

¹⁸⁸ Livingston, "Technology and the 'Third Offset.'"

¹⁸⁹ Matthew Crosston, "World Gone Cyber MAD How 'Mutually Assured Debilitation' Is the Best Hope for Cyber Deterrence," *Strategic Studies Quarterly* 5, no. 1 (Spring 2011): 100–116, <http://www.jstor.org/stable/26270512>.

¹⁹⁰ Jervis, "Mutual Assured Destruction," 40–42.

this temptation. The department should learn from its mistakes, invest in its innovations' failures, and improve based on lessons learned.¹⁹¹

5. Establishing Clear Strategic Objectives for the Third Offset

The Third Offset Strategy is presently the answer to every national defense problem, and thus it is the answer to none. As the DoD continues to research and develop Third Offset technologies and innovations, it should remain cognizant of the strategic objectives for its investment. Superior technological advances alone cannot attain a strategic advantage. The strategic objectives of the Third Offset Strategy should be specified in the National Defense Strategy, as directed by the National Security Strategy. This may mean that the offset strategies must remain agile and flexible, able to span administrations and adapt to changes in national interests.

6. Conforming to National Willingness to Employ

Defense planners should remain particularly attuned to the political environment and public opinions relative to Third Offset Strategy capabilities. Third Offset innovations must remain a viable option for DoD deployment, within the standards and interpretations of *just war* theory.¹⁹²

7. Narrowing the Technology Gap with Allies

The DoD should adjust its approach to the Third Offset Strategy to account for the significant role allied nations play in ensuring global stability and defense of the U.S. homeland. The Third Offset is a U.S. strategy, but it cannot exist in a vacuum. The DoD should focus on increased sharing of its technological advances with trusted allies, in order to preserve (and improve) existing international relations, enhance the allied nations' roles in securing the U.S. national interests as well as their own, and avoid the building resentment of U.S. superiority from friend and foe alike.

¹⁹¹ Edward J. Horres, "Towards a Fourth Offset Strategy," *Small Wars Journal*, August 11, 2016, <http://smallwarsjournal.com/jrnl/art/towards-a-fourth-offset-strategy>.

¹⁹² *Encyclopedia of Global Religion*, s.v. "Just War," ed. Mark Juergensmeyer and Wade Roof (Thousand Oaks, CA: SAGE, 2012), <http://dx.doi.org/10.4135/9781412997898.n375>.

C. CONCLUSION

How can the Department of Defense determine if the Third Offset Strategy is obsolete? The answer to this thesis question is that the DoD should deem the Third Offset Strategy obsolete if the conditions described in this thesis are met, and their attainment serves to challenge the supremacy of the United States.

To arrive at this conclusion, the thesis first explained what offset strategies are and why they are significant to national security. The thesis then provided an overview of the reactivity of the previous two offset strategies and introduced the Third Offset Strategy. Next, the thesis defined the supremacy of the United States as a means to comprehend the core intentions of an offset strategy and presented an analytical approach to the conditions that will degrade (or already have degraded) the strategic values of the Third Offset. Finally, this thesis presented a list of conditions that, if met, individually or comprehensively, should trigger the DoD to withdraw from the Third Offset Strategy. These conditions were related to espionage and intellectual property theft, the strategy's reliance on nonexistent technologies, persistent fiscal constraints of the operating environment, competing homeland defense priorities, the unclear objectives of the Third Offset, national will to employ the strategy's innovations, near-peer parity, and technology gaps with allies. Finally, the thesis presented recommendations that the DoD can enact to prolong the strategic advantages afforded by the Third Offset.

By understanding what could render the Third Offset obsolete, what already has degraded it, and how to control the flow of disruptive innovations into the homeland defense realm, the DoD is better postured to maintain its strategic advantage by weighting the Third Offset to prolong its strategic benefits, and by recognizing when to replace the strategy in advance of near-peer parity. The deterioration of the U.S. strategic advantage is unlikely to be sudden; it is more likely to be a prolonged and gradual process.¹⁹³ The

¹⁹³ Richard Haass, "How a World Order Ends: And What Comes in its Wake," *Foreign Affairs* 98, no. 1 (January, 2019): 22, <http://libproxy.nps.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=133503985&site=ehost-live&scope=site>.

United States cannot wait for the crisis of the disadvantage to address the near-peer threat; the country must remain proactive in avoiding such a situation entirely.¹⁹⁴

D. CURRENT RELEVANCE OF THE THIRD OFFSET

It is the opinion of the author that the Third Offset Strategy is obsolete in its current form. It lacks clear guidance for its objectives, giving it no metric by which to assess its efficacy. The strategy's reliance on technology that does not currently exist gives the Third Offset an increased chance of failure because it asks for faith that these technologies will exist when they are needed. The Third Offset faces numerous hurdles from within the DoD, as funding for research and innovation competes with the overall pool of operations and maintenance resources. While the United States holds distinct advantages in innovation, it is foolish to believe that our near-peer competitors are not working feverishly to close the technological expertise gaps.

This is not to imply that the Third Offset Strategy should be replaced forthwith. While many of the conditions outlined in this thesis have been met, or may soon be met, they have not adversely impacted the supremacy of the United States. The evaluation, refinement, and implementations of the recommendations of this thesis would restore the deterrent value of the Third Offset by aligning its priorities toward unified objectives and ensuring a comprehensive mitigation of the strategy's challenges.

E. LIMITATIONS OF THIS RESEARCH

This thesis only addressed the military aspects of supremacy and national power. Military might alone cannot ensure the superiority of a state; it must work in concert with the other elements of national power. The true superiority of the United States lies in its flexible ability to leverage the whole of its national power, shifting between diplomatic-, informational-, military-, or economic-led activities as the environment warrants.

For the purposes of processing, development, and distribution, this thesis consciously remained at the unclassified, unlimited distribution level. There is,

¹⁹⁴ Haass, 22.

unquestionably, greater detailed information on the subject available at higher levels of security classification.

The concepts and content of this thesis represent the research and original work of the thesis author and advising committee. This thesis does not represent the opinions of the Naval Postgraduate School, the United States Marine Corps, or the Department of Defense.

F. OPPORTUNITIES FOR FUTURE RESEARCH

The purpose of this thesis was to encourage proactive planning for the sustainment of the U.S. strategic advantage. The dynamic homeland defense environment is unforgiving toward passive reactivity. National defense planners must proactively plan for the sustainment of strategic advantages; the United States may not have the luxury of time to regain a decisive advantage over competing near-peer states in the future. The offset strategies only represent a military-centric mechanism to avoid parity. Future research should assess state-level diplomacy, weaponized economics, and the roles of information in providing U.S. supremacy and national security.

This thesis also intentionally did not overtly opine on the design of a Fourth Offset Strategy. The intention of this thesis was to determine what conditions would render the Third Offset obsolete; however, the current strategy is not enduring. At some point in the future the Third Offset will prove irrelevant. Future research is required to determine if another offset strategy is required to provide a strategic advantage for the United States. This research should include an analysis of how the Third Offset failed and a reassessment of the threat(s), and should detail the capabilities and capacity the DoD requires to ensure military supremacy in the future.

LIST OF REFERENCES

- Alterman, Jon B. "The Enemy Gets a Vote." Center for Strategic and International Studies, May 16, 2018. <https://www.csis.org/analysis/enemy-gets-vote>.
- Bacevich, Andrew J., editor. *The Long War: A New History of U.S. National Security Policy since World War II*. New York: Columbia University Press, 2007. <http://www.jstor.org/stable/10.7312/bace13158>.
- Bellais, Renaud, and Daniel Fiott. "The European Defense Market: Disruptive Innovation and Market Destabilization." *Economics of Peace and Security* 12, no. 1 (April, 2017): 38–45. <https://www-epsjournal-org-uk.libproxy.nps.edu/index.php/EPSJ>.
- Bitzinger, Richard. *US-China Competition, the Third Offset Strategy, and Implications for the Global Arms Industry*. San Diego: University of California Institute on Global Conflict and Cooperation, 2017. <https://escholarship.org/uc/item/9140j98k>.
- Brimley, Shawn. "Offset Strategies & Warfighting Regimes." *War on the Rocks*, October 15, 2014. <https://warontherocks.com/2014/10/offset-strategies-warfighting-regimes/>.
- Carafano, James. "The Third Offset: The 'Fairy Dust' Strategy." The Heritage Foundation, November 25, 2014. <https://www.heritage.org/defense/commentary/the-third-offset-the-fairy-dust-strategy>.
- Cavanaugh, Matt L. "False Faith: The Third Offset Isn't a Strategy and Won't Win Our Next War." Modern War Institute, United States Military Academy, February 10, 2017. <https://mwi.usma.edu/false-faith-third-offset-isnt-strategy-wont-win-next-war/>.
- Christensen, Clayton M. *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*, Kindle edition. Cambridge, MA: Harvard Business Review Press, 2016.
- Cleveland, Charles T., Ryan C. Crocker, Daniel Egel, Andrew Liepman, and David Maxwell. *An American Way of Political Warfare: A Proposal*. Santa Monica, CA: RAND, 2018. <https://www.rand.org/pubs/perspectives/PE304.html>.
- Coats, Daniel R. *Worldwide Threat Assessment of the U.S. Intelligence Community*. Washington, DC: Director of National Intelligence, 2018. <https://www.dni.gov/files/documents/Newsroom/Testimonies/2018-ATA---Unclassified-SSCI.pdf>.
- Cooper, Charles. "House Hearing: U.S. Now Under Cyber Attack." CNET, April 24, 2012. <https://www.cnet.com/news/house-hearing-u-s-now-under-cyber-attack/>.

- Crosston, Matthew. "World Gone Cyber MAD How 'Mutually Assured Debilitation' Is the Best Hope for Cyber Deterrence." *Strategic Studies Quarterly* 5, no. 1 (Spring 2011): 100–116. <http://www.jstor.org/stable/26270512>.
- Davies, Andrew. "US Military's Third Offset Strategy: A Silver Bullet or Simply a Bad Idea?" *The National Interest* (blog), August 3, 2016. <http://nationalinterest.org/blog/the-buzz/us-militarys-third-offset-strategy-silver-bullet-or-simply-17227>.
- Department of Defense. *Law of War Manual*. Washington, DC: Office of General Counsel, 2016. http://permanent.access.gpo.gov/gpo71097/DoD_Law_of_War_Manual-June_2015_Updated_May_2016.pdf.
- . "Our Story." Accessed January 12, 2019. www.defense.gov/Experience/Our-Story/.
- Dobbins, James, John G. McGinn, Keith Crane, Seth G. Jones, Rollie Lal, Andrew Rathmell, Rachel Swanger, and Anga Timilsina. *America's Role in Nation-Building: From Germany to Iraq*. MR-1753-RC. Santa Monica, CA: RAND, 2003. https://www.rand.org/pubs/monograph_reports/MR1753.html.
- Fallows, James. "The Military-Industrial Complex." *Foreign Policy*, no. 133 (November 2002): 46–48. <http://search.proquest.com/docview/60603748/>.
- Fan Gaoyue. *A Chinese Perspective on the U.S. Third Offset Strategy and Possible Chinese Responses*. San Diego: University of California Institute on Global Conflict and Cooperation, 2017. <http://www.escholarship.org/uc/item/5wh2v87n>.
- Federal Bureau of Investigation. "Intellectual Property Theft/Piracy." Accessed October 27, 2018. <https://www.fbi.gov/investigate/white-collar-crime/piracy-ip-theft>.
- Federal Bureau of Investigation and Department of Homeland Security. *GRIZZLY STEPPE—Russian Malicious Cyber Activity*. JAR-16-20296A. Washington, DC: Department of Homeland Security, 2016. https://www.us-cert.gov/sites/default/files/publications/JAR_16-20296A_GRIZZLY%20STEPPE-2016-1229.pdf.
- Felter, Joseph. "It's Not Just the Technology: Beyond Offset Strategies." *Strategika*, no. 39 (March 2017). <https://www.hoover.org/research/its-not-just-technology-beyond-offset-strategies>.
- Fiott, Daniel. "A Revolution Too Far? U.S. Defence Innovation, Europe and NATO's Military-Technological Gap." *Journal of Strategic Studies* 40, no. 3 (May 2016): 417–37. <https://doi.org/10.1080/01402390.2016.1176565>.
- . "Europe and the Pentagon's Third Offset Strategy." *RUSI* 161, no. 1 (March 2016): 26–31. <https://doi.org/10.1080/03071847.2016.1152118>.

- Gallagher, Michael J. "Intelligence and National Security Strategy: Reexamining Project Solarium." *Intelligence and National Security* 30, no. 4 (July 4, 2015): 476–78. <https://doi.org/10.1080/02684527.2014.885203>.
- Glaser, Charles L. "The Causes and Consequences of Arms Races." *Annual Review of Political Science* 3, no. 1 (June 2000): 251–76. <http://www.annualreviews.org/doi/10.1146/annurev.polisci.3.1.251>.
- Haass, Richard. "How a World Order Ends: And What Comes in its Wake." *Foreign Affairs* 98, no. 1 (January 2019): 22–30. <http://libproxy.nps.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=133503985&site=ehost-live&scope=site>.
- Horres, Edward J. "Towards a Fourth Offset Strategy." *Small Wars Journal*, August 11, 2016. <http://smallwarsjournal.com/jrnl/art/towards-a-fourth-offset-strategy>.
- Ellman, Jesse, Lisa Samp, and Gabriel Coll. *Assessing the Third Offset Strategy*. Washington, DC: Center for Strategic and International Studies, 2016. https://csis-prod.s3.amazonaws.com/s3fs-public/publication/170302_Ellman_ThirdOffsetStrategySummary_Web.pdf?EX01GwjFU22_Bkd5A.nx.fJXTKRDKbVR.
- Hagel, Chuck. "The Defense Innovation Initiative." Official memorandum, Department of Defense, 2017. <http://archive.defense.gov/pubs/OSD013411-14.pdf>.
- Hambling, David. "China Looks to Undermine U.S. Power, with 'Assassin's Mace.'" *Wired*, July 2, 2009. <https://www.wired.com/2009/07/china-looks-to-undermine-us-power-with-assassins-mace>.
- Handel, Michael I. *Masters of War: Classical Strategic Thought*. London: Routledge, 2005. <https://doi.org/10.4324/9780203017746>.
- Harrison, Todd, and Seamus P. Daniels. *Analysis of the FY 2019 Defense Budget*. Washington, DC: Center for Strategic and International Studies, September 2018. https://csis-prod.s3.amazonaws.com/s3fs-public/publication/180917_HarrisonDefenseBudget2019.pdf?uUH.v7t_nXrNnkX01631tlu7IGamFie9.
- Harrison, Todd, Kaitlyn Johnson, and Thomas G. Roberts. *Space Threat Assessment 2018*. Washington, DC: Center for Strategic and International Studies, 2018. https://aerospace.csis.org/wp-content/uploads/2018/04/Harrison_SpaceThreatAssessment_FULL_WEB.pdf.
- Hart, Basil Henry Liddell. *Strategy*. New York: Praeger, 1954.
- Heginbotham, Eric, Michael Nixon, Forrest Morgan, Jacob Heim, Jeff Hagen, Sheng Tao Li, Jeffrey Engstrom, et al. *The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996–2017*. RR-392-AF. Santa Monica, CA: RAND, 2015. <https://doi.org/10.7249/RR392>.

- Holloway, David. "Nuclear Weapons and the Escalation of the Cold War, 1945–1962." In *The Cambridge History of the Cold War*, edited by Melvyn P. Leffler and Odd Arne Westad, 376–97. Cambridge: Cambridge University Press, 2010. <https://doi.org/10.1017/CHOL9780521837194.019>.
- Information Office of the State Council. *China's Peaceful Development*. Beijing: People's Republic of China, 2011. http://www.gov.cn/english/official/2011-09/06/content_1941354.htm.
- Insinna, Valerie. "Pentagon Presents Recommendations on Space Force to Trump." *Defense News*, October 23, 2018. <https://www.defensenews.com/space/2018/10/23/pentagon-presents-recommendations-on-space-force-to-trump/>.
- Jablonsky, David. "US Military Doctrine and the Revolution in Military Affairs." *Parameters* 41, no. 3 (October 1994): 18–36. <http://www.ssi.armywarcollege.edu/pubs/parameters/articles/1994/jablonsk.htm>.
- Jervis, Robert. "Cooperation under the Security Dilemma." *World Politics* 30, no. 2 (January 1978): 167–214. <https://doi.org/10.2307/2009958>.
- . "Mutual Assured Destruction." *Foreign Policy*, no. 133 (November–December 2002): 40–42. https://www-jstor-org.libproxy.nps.edu/stable/3183553?seq=1#metadata_info_tab_contents.
- Johnson, Theodore R. "Will the Department of Defense Invest in People or Technology?" *The Atlantic*, November 29, 2016. <https://www.theatlantic.com/politics/archive/2016/11/trump-military-third-offset-strategy/508964/>.
- Joint Chiefs of Staff. *Defense Support of Civil Authorities*. JP 3–28. Washington, DC: Joint Chiefs of Staff, 2018. https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_28.pdf.
- Kagan, Frederick, and Catharine Harris. "The United States Must Take Swift Action to Stop Russia's Aggression." *The Hill*, March 7, 2018. <http://thehill.com/opinion/international/377195-the-united-states-must-take-swift-action-to-stop-russias-aggression>.
- Kania, Elsa, and Kenneth Allen. *The Human and Organizational Dimensions of the PLA's Unmanned Aerial Vehicle Systems*. Washington, DC: The Jamestown Foundation, 2016. https://jamestown.org/wp-content/uploads/2016/05/CB_16_8_1.pdf?x87069.
- Kashin, Vasily. *Russian Perspectives on the Third Offset Strategy and Its Implications for Russian-Chinese Defense Technological Cooperation*. San Diego: University of California Institute on Global Conflict and Cooperation, 2017. <https://cloudfront.escholarship.org/dist/prd/content/qt2dh5c1nh/qt2dh5c1nh.pdf?t=om3onb>.

- Kashin, Vasily, and Michael Raska. "Countering the U.S. Third Offset Strategy: Russian Perspectives, Responses and Challenges." PR170124. Policy report, S. Rajaratnam School of International Studies, Nanyang Technological University, 2017. <https://www.rsis.edu.sg/rsis-publication/idss/countering-the-u-s-third-offset-strategy-russian-perspectives-responses-and-challenges/#.XGLpUbAUnIU>.
- Keck, Zachary. "Nuclear Weapon Stockpiles: Past and Present." *The Diplomat*, September 2, 2013. <https://thediplomat.com/2013/09/nuclear-weapon-stockpiles-past-and-present/>.
- Keefer, Edward C. *Harold Brown: Offsetting the Soviet Military Challenge 1977–1981*. Washington, DC: Historical Office, Office of the Secretary of Defense, 2017. http://history.defense.gov/Portals/70/Documents/secretaryofdefense/OSDSeries_Vol9.pdf?ver=2017-06-13-152737-467.
- Kennedy, Paul. *The Rise and Fall of Great Powers: Economic Change and Military Conflict from 1500 to 2000*, Kindle edition. New York: Random House, 1987.
- Lee, Jeho, Seung Ho Park, Young Ryu, and Yoon-Suk Baik. "A Hidden Cost of Strategic Alliances under Schumpeterian Dynamics." *Research Policy* 39, no. 2 (March 2010): 229–38. <https://doi.org/10.1016/j.respol.2009.12.004>.
- Lindsay, Jon R. "The Impact of China on Cybersecurity: Fiction and Friction." *International Security* 39, no. 3 (Winter 2014/2015): 7–47. https://doi.org/10.1162/ISEC_a_00189.
- Livingston, Ian. "Technology and the 'Third Offset' Foster Innovation for the Force of the Future." Brookings Institution, December 9, 2016. www.brookings.edu/blog/order-from-chaos/2016/12/09/technology-and-the-third-offset-foster-innovation-for-the-force-of-the-future/.
- Maurer, Tim, and Scott Janz. *The Russia-Ukraine Conflict: Cyber and Information Warfare in a Regional Context*. Zurich, Switzerland: Center for Security Studies, 2014. https://www.files.ethz.ch/isn/187945/ISN_184345_en.pdf.
- McGregor, James. *China's Drive for "Indigenous Innovation": A Web of Industrial Policies*. Washington, DC: Global Intellectual Property Center, 2010. https://www.uschamber.com/sites/default/files/documents/files/100728chinareport_0_0.pdf.
- Mearsheimer, John J. "Precision-Guided Munitions and Conventional Deterrence." *Survival* 21, no. 2 (March 1979): 68–76. <https://doi.org/10.1080/00396337908441802>.
- Miklaucic, Michael. "Allies, Alliances, and the Fourth Strategic Offset." Real Clear Defense, August 10, 2018. https://www.realcleardefense.com/articles/2018/08/10/allies_alliances_and_the_fourth_strategic_offset_113706.html.

- Nakashima, Ellen. "Confidential Report Lists U.S. Weapons System Designs Compromised by Chinese Cyberspies." *Washington Post*, May 27, 2013. https://www.washingtonpost.com/world/national-security/confidential-report-lists-us-weapons-system-designs-compromised-by-chinese-cyberspies/2013/05/27/a42c3e1c-c2dd-11e2-8c3b-0b5e9247e8ca_story.html?utm_term=.c751d1afdf86.
- Norris, Robert S. "The History of the U.S. Nuclear Stockpile 1945–2013." *Science and Security* 66, no. 3 (Summer 2013). <https://fas.org/pir-pubs/the-history-of-the-u-s-nuclear-stockpile-1945-2013/>.
- North Atlantic Treaty Organization. *The North Atlantic Treaty*. Washington, DC: NATO, 1949. https://www.nato.int/nato_static_fl2014/assets/pdf/stock_publications/20120822_nato_treaty_en_light_2009.pdf.
- Ochmanek, David, Peter A. Wilson, Brenna Allen, John S. Meyers, and Carter C. Price. *U.S. Military Capabilities and Forces for a Dangerous World: Rethinking the U.S. Approach to Force Planning*. RR-1782-1-RC. Santa Monica, CA: RAND, 2017. https://www.rand.org/pubs/research_reports/RR1782-1.html.
- O'Hanlon, Michael, David Petraeus. "America's Awesome Military: And How to Make it Even Better." *Foreign Affairs* 95, no. 5 (September/October 2016): 10–17. <https://www.foreignaffairs.com/articles/americas/2016-07-22/america-s-awesome-military>.
- Pellerin, Cheryl. "Deputy Secretary: Third Offset Strategy Bolsters America's Military Deterrence." Department of Defense, October 31, 2016. <https://www.defense.gov/News/Article/Article/991434/deputy-secretary-third-offset-strategy-bolsters-americas-military-deterrence/>.
- Perry, William J. "Technology and National Security: Risks and Responsibilities." Paper presented at Conference on Risk and Responsibility in Contemporary Engineering and Science, French and U.S. Perspectives, Stanford Center for Interdisciplinary Studies, 2003. <https://stanford.edu/dept/france-stanford/Conferences/Risk/Perry.pdf>.
- Posen, Barry R. "Command of the Commons: The Military Foundation of U.S. Hegemony." *International Security* 28, no. 1 (July 2003): 5–46. <https://doi.org/10.1162/016228803322427965>.
- Rumelt, Richard. "The Perils of Bad Strategy." *McKinsey Quarterly* (June 2011). <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-perils-of-bad-strategy>.
- Runde, Daniel F., and Conor M. Savoy. *Nation Building by Any Other Name*. Washington, DC: Center for Strategic and International Studies, 2017. <https://www.csis.org/analysis/nation-building-any-other-name>.

- Saunders, Phillip C., and Joshua K. Wiseman. *Buy, Build, or Steal: China's Quest for Advanced Military Aviation Technologies*. Washington, DC: National Defense University Press, 2011. <http://www.dtic.mil/dtic/tr/fulltext/u2/a577394.pdf>.
- Schumpeter, Joseph A. *Capitalism, Socialism & Democracy*. London: Routledge, 1943. eet.pixel-online.org/files/etranslation/original/Schumpeter,%20Capitalism,%20Socialism%20and%20Democracy.pdf.
- Schwartz, Norton A. "The U.S. Faces an Innovator's Dilemma in its Relationship with China." Real Clear Defense, February 5, 2018. https://www.realcleardefense.com/articles/2018/02/05/the_us_faces_an_innovators_dilemma_in_its_relationship_with_china_113013.html.
- Sheehan, Michael. *Balance of Power: History & Theory*. London: Routledge, 1995. <https://doi.org/10.4324/9780203344613>.
- Shultz, Clifford J. II, and Bill Saporito. "Protecting Intellectual Property: Strategies and Recommendations to Deter Counterfeiting and Brand Piracy in Global Markets." *Columbia Journal of World Business* 31, no. 1 (March 1996): 18–28. [https://doi.org/10.1016/S0022-5428\(96\)90003-4](https://doi.org/10.1016/S0022-5428(96)90003-4).
- Singer, Peter Warren, and Allan Friedman. *Cybersecurity and Cyberwar: What Everyone Needs to Know*, Kindle edition. New York: Oxford University Press, 2014.
- Sullivan, Michael J., Christopher R. Durbin, Marie Ahearn, Emily Bond, Jared Dmello, Richard Hung, Lorraine Ettaro, Rich Hung, Justin Jaynes, Ron La Due Lake, Sean Seales, Brian Smith, and Robin Wilson. *Defense Science and Technology: Adopting Best Practices Can Improve Innovation Investments and Management*. GAO-17-499. Washington, DC: Government Accountability Office, 2017.
- Szayna, Thomas S., Daniel Byman, Steven C. Bankes, Derek Eaton, Seth G. Jones, Robert Mullins, Ian O. Lesser, and William Rosenau. *The Emergence of Peer Competitors: A Framework for Analysis*. MR-1346-A. Santa Monica, CA: RAND, 2001. https://www.rand.org/pubs/monograph_reports/MR1346.html.
- Task Force on Russia and U.S. National Interests. *Russia and U.S. National Interests*. Cambridge, MA: Belfer Center for Science and International Affairs, 2011. https://www.belfercenter.org/sites/default/files/legacy/files/Russia-and-US-NI_final-web.pdf.
- Thomas, William. "GAO Urges DoD to Differentiate Management of 'Disruptive' and 'Incremental' R&D." American Institute of Physics, July 13, 2017. <https://www.aip.org/fyi/2017/gao-urges-dod-differentiate-management-disruptive-and-incremental-rd>

- . “Trump Budget Cuts Defense S&T by 5.8% While Funding Third Offset Priorities.” American Institute of Physics, June 1, 2017. <https://www.aip.org/fyi/2017/trump-budget-cuts-defense-st-58-while-funding-third-offset-priorities>.
- U.S. Department of State. “Report to the National Security Counsel by the Executive Secretary.” In *Foreign Relations of the United States, 1952–1954*, vol. II, part 1, edited by Lisle A. Rose and Neal H. Petersen. Washington, DC: United States Government Printing Office, 1984. <https://history.state.gov/historicaldocuments/frus1952-54v02p1/d101>.
- Uchitelle, Louis. “The U.S. Still Leans on the Military-Industrial Complex.” *New York Times*, September 22, 2017. <https://www.nytimes.com/2017/09/22/business/economy/military-industrial-complex.html>.
- Waite, Ralph J. IV. “The Fragility of Air Dominance.” Master’s thesis, U.S. Army War College, 2012. <http://www.dtic.mil/dtic/tr/fulltext/u2/a561936.pdf>.
- Walton, Timothy A. “Securing the Third Offset Strategy: Priorities for the Next Secretary of Defense.” *Joint Force Quarterly* 3rd Quarter, no. 82 (July 2016): 6–15. <https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-82/Article/793224/securing-the-third-offset-strategy-priorities-for-the-next-secretary-of-defense/>.
- Wood, Peter. *In a Fortnight: Chinese Perceptions of the “Third Offset Strategy.”* Washington, DC: The Jamestown Foundation, 2016. https://jamestown.org/wp-content/uploads/2016/10/CB_16_15.pdf?x87069.
- Work, Robert. “Remarks by Deputy Secretary Work on Third Offset Strategy.” Speech, April 28, 2016. <https://www.defense.gov/News/Speeches/Speech-View/Article/753482/remarks-by-d%20eputy-secretary-work-on-third-offset-strategy/>.
- . “The Third U.S. Offset Strategy and Its Implications for Partners and Allies.” Speech, January 28, 2015. <https://www.defense.gov/News/Speeches/Speech-View/Article/606641/the-third-us-offset-strategy-and-its-implications-for-partners-and-allies/>.
- Yarger, H. Richard. “Towards a Theory of Strategy: Art Lykke and the Army War College Strategy Model.” United States Air Force Air War College, accessed March 7, 2019. <http://www.au.af.mil/au/awc/awcgate/army-usawc/stratpap.htm>.
- Zikidis, Konstantinos, and Charisios Tokas. “Low Observable Principles, Stealth Aircraft and Anti-stealth Technologies.” Paper presented at 2nd International Conference on Applications of Mathematics and Information in Military Science (AMIMS), Athens, Greece, 11–12 April, 2013. https://www.researchgate.net/profile/Konstantinos_Zikidis/publication/259503614_Low_Observable_Principles_Stealth_Aircraft_and_Anti-Stealth_Technologies/links/00b4952c58a741e39f000000.pdf

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